

# Manufacturers Record

## Industry Construction



\$6.50 per Year.  
Single Copy, 20 Cents.

Baltimore, Md.  
APRIL 10, 1930

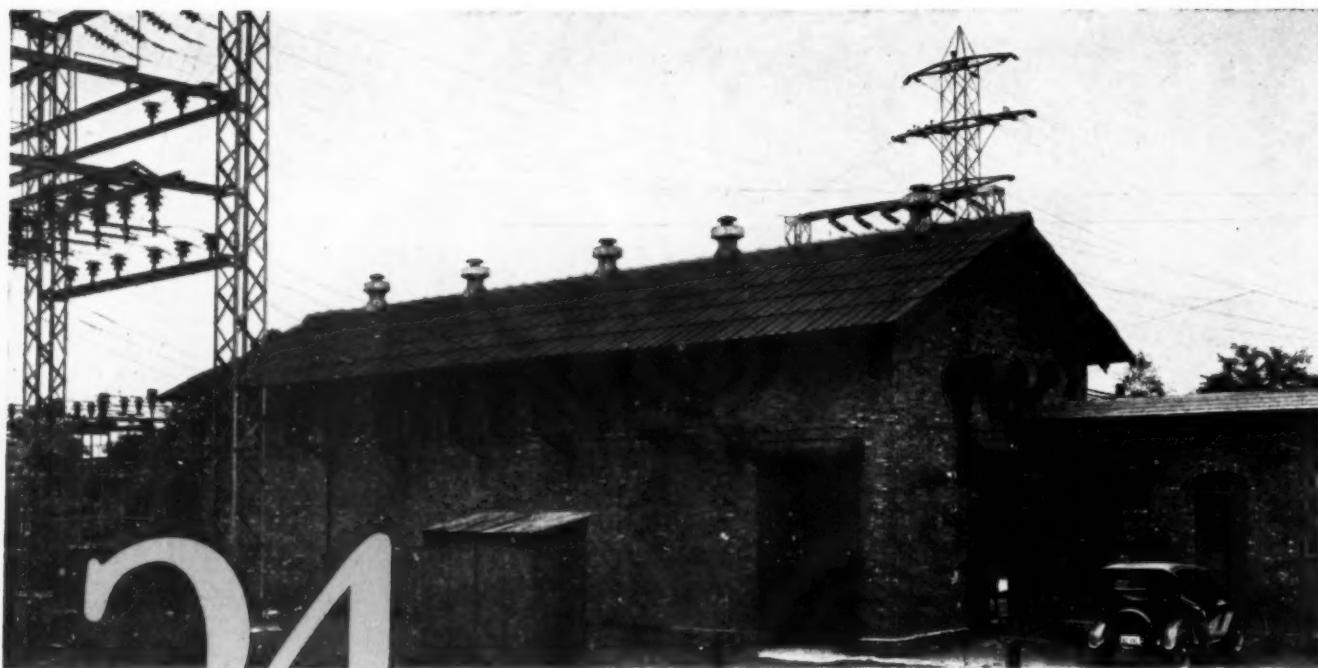
## Adoption of Tariff Bill Will Help to Remove Business Uncertainty

When the tariff bill as finally revised, passed by Congress and signed by the President, is out of the way a great uncertainty will have been lifted from the business interests of the country. There is not a business of any kind that will not in one way or another be affected by a tariff. The man who believes in a protective tariff is afraid to make any move in business so long as he is uncertain what the bill will be. The man who believes in free trade is equally uncertain as to what move he should make until he finds what the tariff bill is going to be like.

Running through every avenue of employment, on the farm, in the factory, in the store and in the office, a tariff bill so long as it is before Congress is a deterring influence on employment and on everything which goes into business progress of the country. It is, therefore, a matter of profound congratulation that we are reaching the end of the tariff discussion, for it cannot much longer continue to claim the attention of Congress. It will soon be definitely known what the tariff is and the influence it will have upon business. It may not be thoroughly satisfactory in every respect, but from present appearance the Manufacturers Record believes this tariff will be one of the best ever enacted in this country for the progress and prosperity of America.

It will not hurt our foreign trade. We will continue to buy from other lands the things that we have to have, and they will continue to buy from us. It has long since been proven that a protective tariff does not prevent the interchange of foreign commerce, but a protective tariff does safeguard this market from being flooded to an enormous extent with the products of the cheap labor of other lands. Benjamin Harrison when president wisely said in his plea for a protective tariff against the cheap products of foreign lands that "a cheap coat makes a cheap man." Profitable pay to the laboring man, whether on the farm or in the factory, helps to create prosperity for all.

President Lincoln has often been quoted in favor of a protective tariff by saying that when we buy rails in England, England has the money and we have the rails; but that when we make the rails at home we have both the rails and the money. Simple as that statement is, it carries a great truth.



*24* YEARS  
*without EVER NEEDING*  
*a DOCTOR*

*Perfect shelter for expensive electrical machinery—with no roof repairs, no maintenance for twenty-four years. This red interlocking roof on the North Charlotte, N. C., sub-station of the Southern Power Co., is a convincing demonstration of the unusual resistance and durability of Cementile.*

A STRIKING record of efficient and economical roof protection. An example of what to expect when Cementile is used for the roofs on your industrial buildings. No weather, fire, moisture nor any other natural destructive force can penetrate these steel-reinforced concrete roofing tile. They are laid directly on the roof purlins

... that's all there is to it. No doctoring up needed, no repairs to worry about during a long life of satisfactory service.

Many other examples of how and where Cementile is proving the lowest cost, most lasting roof possible to use, are contained in our illustrated Roofing Book. Write for your copy.

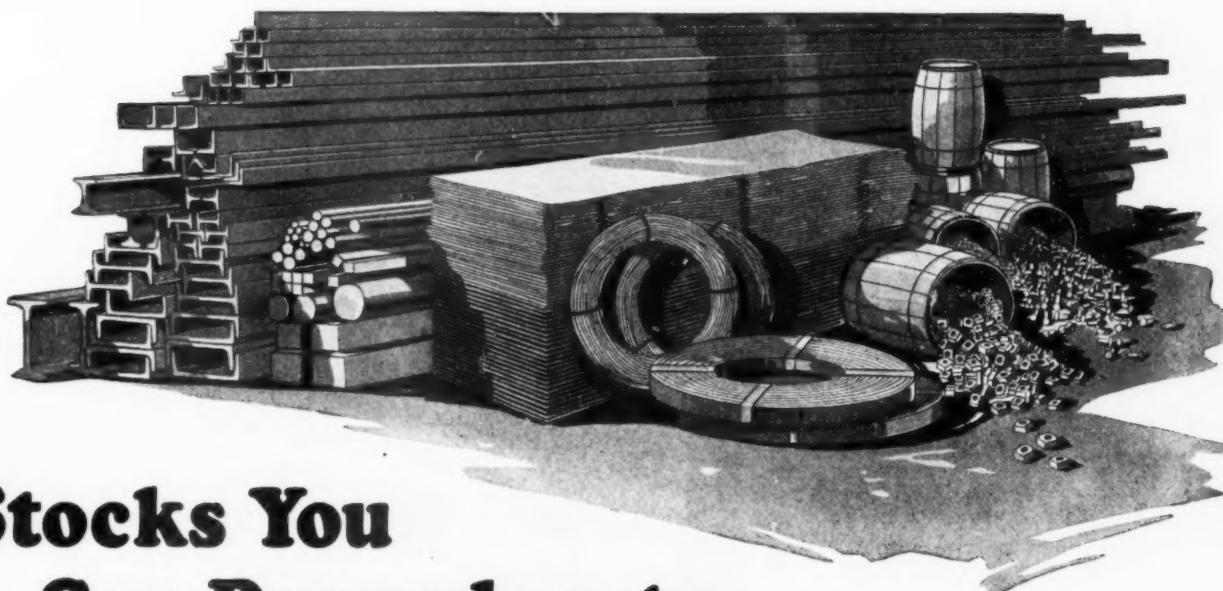
**AMERICAN CEMENT TILE MANUFACTURING CO.**

804 Oliver Building, Pittsburgh, Pa.

*Plants: WAMPUM, PA. LINCOLN, N. J. BIRMINGHAM, ALA.*

*Offices: PITTSBURGH NEW YORK PHILADELPHIA ATLANTA BIRMINGHAM*

**CEMENTILE**



## Stocks You Can Depend on to Meet Every Steel Requirement

Steel in every shape and size—standard and special grades—more than 175,000 tons always in stock for immediate shipment.

No matter what your requirement—as to special product or emergency delivery—you can call on Ryerson with reasonable assurance that everything possible will

be done to meet your requirements well within the time specified.

There is a Ryerson plant near you. There is another near your branch or job. This permits distant as well as local buying to the best advantage. Order from the plant nearest you. Immediate shipment is assured.

*A few of the 1001 items in stock for immediate shipment*

Bars	Refined Iron	Boiler Tubes	Alloy Steel
Structurals	Turned Ground and	and Fittings	Tool Steel
Rails	Polished Shafting	Welding Rod	Concrete Reinforcing
Plates	Screw Stock	Forging Bars	Firmtread Plates
Sheets, Blk. & Galv.	Strip Steel	Babbitt Metal	Small Tools
Sheets, Full Finished	Rivets and Bolts	Allegheny Metal	Machinery, etc.

*Write for the Ryerson Journal and Stock List—the "Key" to Immediate Steel*

**JOSEPH T. RYERSON & SON INC.**

*Plants:* Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City

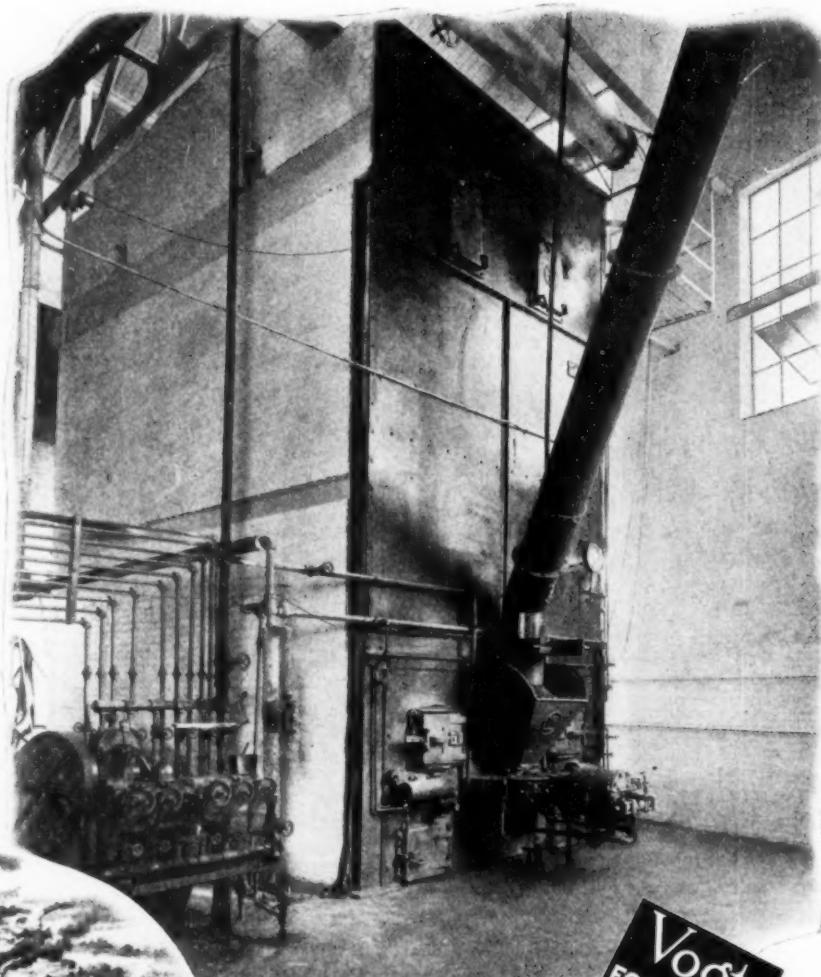
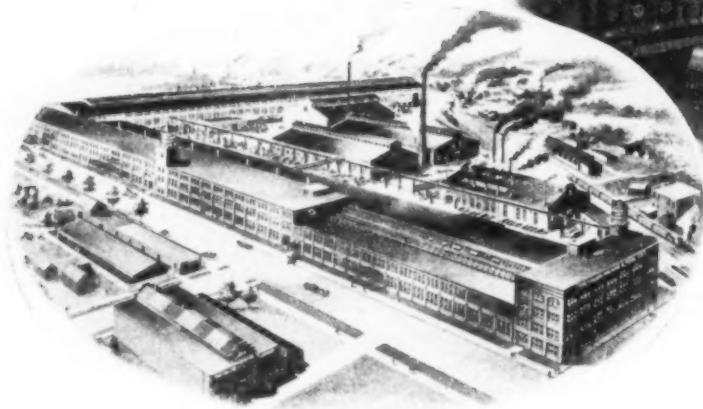
*Representation in:* Minneapolis, Rockford, Kansas City, Tulsa, Houston, Newark, New York, Denver, Los Angeles, San Francisco

**RYERSON**  
STEEL - SERVICE

# Vogt Boiler

*Performance  
In This Large Plant  
Has Unanimous*

O.K.



Vogt  
FOR BETTER  
BOILERS



TOLEDO MACHINE  
& TOOL CO.  
TOLEDO, OHIO

*Every user of fine ma-  
chinery and tools will  
recognize this well  
known name.*

IT is not unusual that this plant enthusiastically endorses Vogt boilers. Every other installation has proved a similar success due to the experience of Vogt engineers in designing and building water tube boilers.

The above 300 h. p. unit was installed under the supervision of the Jos. L. Skeldon Engineering Co. of Toledo.

BRANCH OFFICES:  
NEW YORK  
CHICAGO  
CLEVELAND  
DALLAS  
PHILADELPHIA

**HENRY VOGT MACHINE CO.**  
(Incorporated)  
LOUISVILLE, KY.

*Manufacturers of: Oil Refinery Equipment, Drop Forged Steel Valves and Fittings, Water  
Tube and Horizontal Return Tubular Boilers, Ice Making and Refrigerating Machinery.*



ESTABLISHED 1868

# THE BABCOCK & WILCOX COMPANY

85 LIBERTY STREET, NEW YORK

*Manufacturers of*

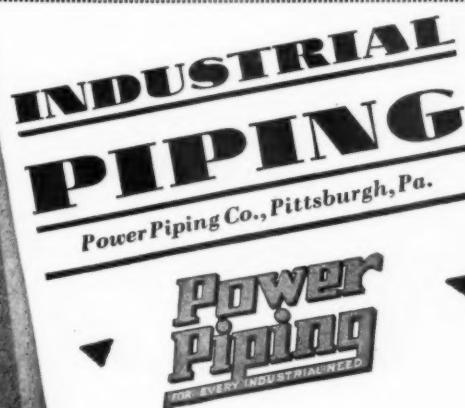
Water-Tube Boilers, Steam Superheaters, Air Preheaters, Economizers,  
Chain Grate Stokers, Oil Burners and Refractories.  
Pressure Vessels and Special Process Equipment.

BRANCH OFFICES

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BOSTON, 80 Federal Street  
CHICAGO, Marquette Building  
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CLEVELAND, Guardian Building  
DALLAS, TEXAS, Magnolia Building  
DENVER, 444 Seventeenth Street

DETROIT, Ford Building  
HOUSTON, TEXAS, Electric Building  
LOS ANGELES, Central Building  
NEW ORLEANS, 344 Camp Street  
PHILADELPHIA, Packard Building  
PHOENIX, ARIZ., Heard Building  
PITTSBURGH, Koppers Building

PORTLAND, ORE., Failing Building  
SALT LAKE CITY, Kearns Building  
SAN FRANCISCO, Sheldon Building  
SEATTLE, Smith Tower  
HONOLULU, T. H., Castle & Cooke  
Building  
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SAN JUAN, PORTO RICO, Recinto Sur 5



## NATIONALLY KNOWN

Large users of power the country over are taking advantage of our "world's fastest boiler tube service." This includes steel mills, railroads, public service corporations and manufacturers.

Our tubes are made to A.S.M.E. specifications by manufacturers nationally known for quality. We do the warehousing, the cutting, the bending, the shipping. All sizes, all types of tubes. Write us today for prices!

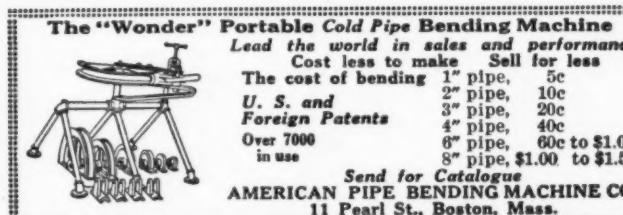
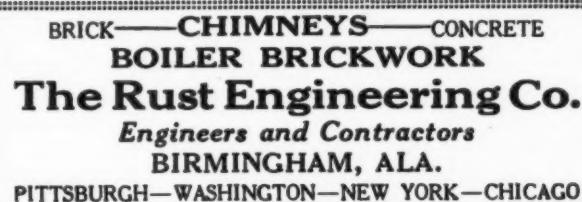
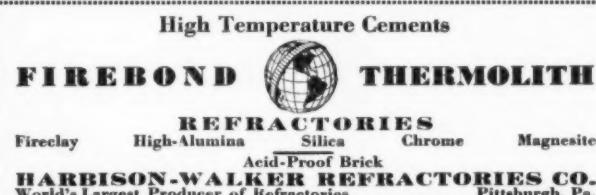
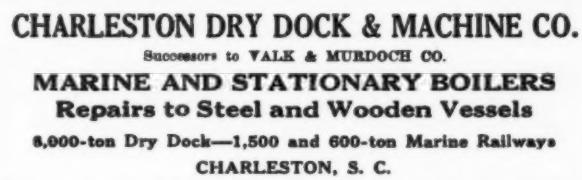
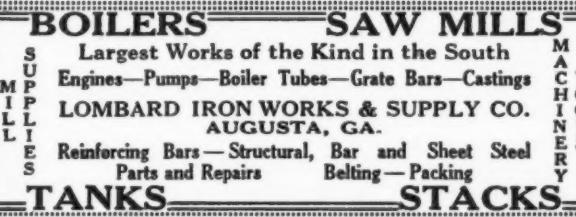
### BOILER TUBE COMPANY OF AMERICA

"World's Fastest Boiler Tube Service"

Main Office and Works:  
3127 Preble Avenue, PITTSBURGH, PA.

NEW YORK

CHICAGO



# SIX-WHEEL FACTORY TRUCKS



Price, Complete with Box

**\$130**

F. O. B. CLEVELAND, OHIO

Stake Model \$113.50

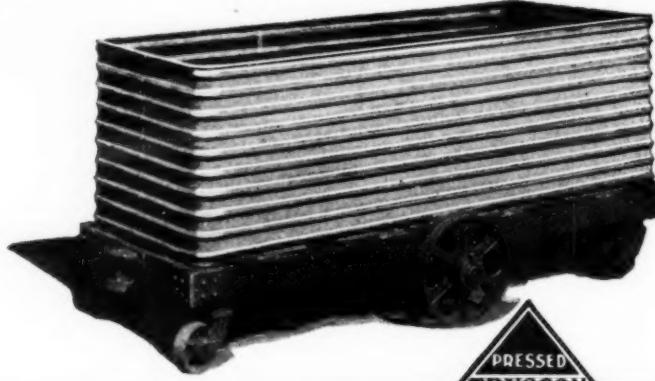
Discounts on Quantity Orders

**TRUSCON STEEL COMPANY**

PRESSED STEEL DIVISION

6100 Truscon Avenue, Cleveland, Ohio

A new model, durable and spacious factory truck for the economical handling of materials. Size 34" x 98" x 30" high. Capacity 8,000 pounds. Extra strong reinforced frame. Wheels are equipped with Hyatt roller bearings and have large diameter and bearing tread. The patented coupling permits instant coupling and uncoupling from the driver's seat. Truck can be swung around on its own center. Saves many times its low cost.



*Established 1858*  
**PATTERSON**

## BLOCKS

A substantial block for every purpose.

Write for Catalog No. 22

**W. W. Patterson Co.**  
57 Water St., Pittsburgh, Pa.



## WATER FILTERS

Pressure and Gravity type for Municipal Water Supplies, Rayon Manufacturing Plants, Textile Finishing Establishments, Raw Water Ice Plants, Laundries, Etc.

**ROBERTS FILTER MANUFACTURING COMPANY**  
604 Columbia Avenue  
Darby, Pennsylvania

## DECALSO

### Water Minus All Hardness

insures even dyeing; smooth running threads; reduction in thread and needle breaks in knitting.

**AMERICAN WATER SOFTENER COMPANY**  
S. E. Cor. 4th and Lehigh Ave. **PHILADELPHIA**

**CONTINENTAL GIN COMPANY**  
announces many new improvements in Cotton Ginning Machinery and Heavy Duty Oil Engines.

Write for Details

Address: 4600 4th Ave. So., Birmingham, Ala.

## HOW LONG — ? Does Your Equipment Last?

### ANGLE STEEL STOOLS and Chairs



No. 1



No. 100

ANGLE STEEL Stools and Chairs are built for heavy duty. They are permanent, safe, serviceable, with no time out for repairs or replacements. Unequaled in strength, appearance and general utility—a style and kind for every industrial purpose.

No. 1 Stool—Heights, 12, 14, 16, 18, 20, 22 and 26 inches high. Wood seat as No. 1. Angle Steel frame, finished olive green enamel. With steel back rest. No. 11 Stool.

No. 100 Stool—18, 20, 22, 24, 26 and 27 inches high. Wood seat as No. 1. Angle Steel frame, finished olive green enamel. With steel back rest. No. 110 Stool.

No. 1700 Tablet Arm Chair—Arm size, 12 $\frac{1}{4}$ " x 27" long. Hardwood saddle seat, 14 $\frac{1}{2}$ " square. Two piece wood back rest. May also be secured with steel 3-piece back rest. Seat 16", 17" and 18" high.

We also make a complete line of Factory, Shop and Office Equipment—Special pieces built to your order



No. 1700



**Angle Steel Equipment** PERMANENCE IN STEEL

ECONOMICAL SANITARY DURABLE



ANGLE STEEL STOOL CO., Plainwell, Mich.

Send Catalog "C-MR"

Name .....

Address .....



*The Southdown Sugar Plantation  
has more than 8000 acres of land  
under cultivation.*



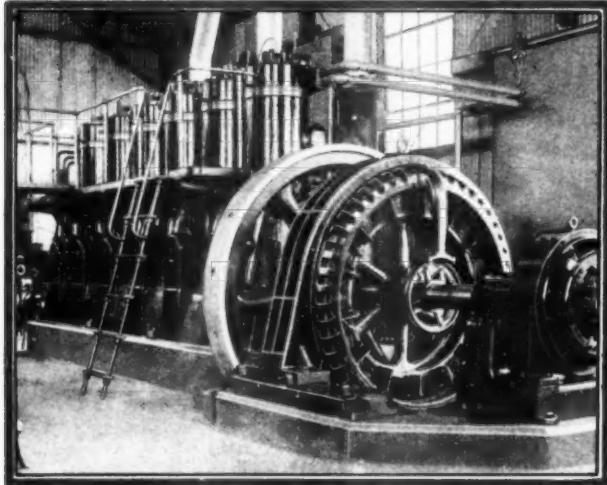
**E**XCESSIVE power costs on the Southdown Plantation—one of the largest in Louisiana—led to the installation of a 180 hp. Fairbanks-Morse Diesel Engine in 1928. This engine, which powers all auxiliaries in the main refinery, reduced costs so substantially that it *paid for itself* in a short time. On this performance record, a 360 hp. F-M Diesel electric unit was added. The two units now handle practically every operation in the sugar house. Power costs have been reduced to a figure never before approached in this plant, and the larger engine,

## F-M Diesels cut sugar refining costs

too, will soon *pay for itself out of savings.*

In addition to the tremendous savings shown during the grinding season, the Fairbanks-Morse Diesels have brought new efficiency and economy during the nine month shutdown season. The engines can be started immediately and they are practically as efficient when operating at part time as they are at full time. There is no stand-by expense and part time operation is not affected by "maximum demand" charges.

In most cases (as in the above) comparison of F-M Diesel operating costs with present power costs indicates that a substantial saving would result from the adoption of this form of power. So substantial are F-M Diesel savings that a purchase plan is offered, whereby the actual savings become the payments for the engine. Competent Fairbanks-Morse engineers will measure *your* power requirements and will tell you, in dollars and cents, the saving that can be obtained. This service does not obligate you.



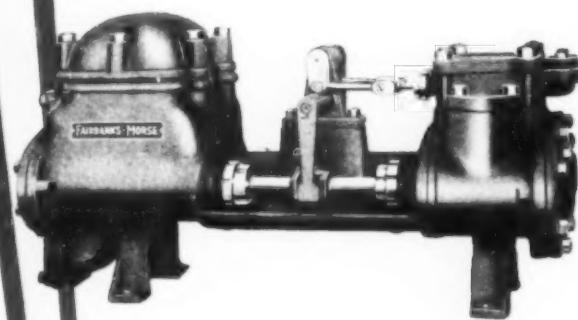
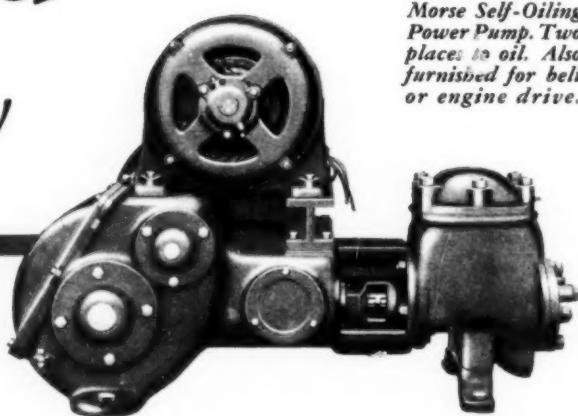
*360 hp. F-M Diesel electric generator set which—with the original 180 hp. unit—handles practically every operation in the sugar house.*

## DIESEL ENGINES

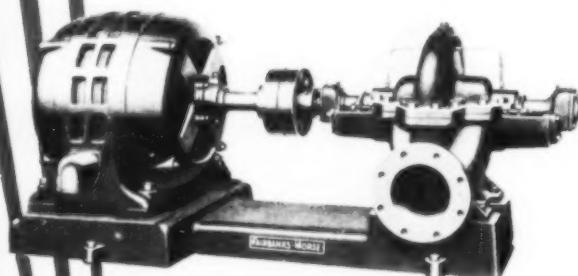


# Field tested —at the factory

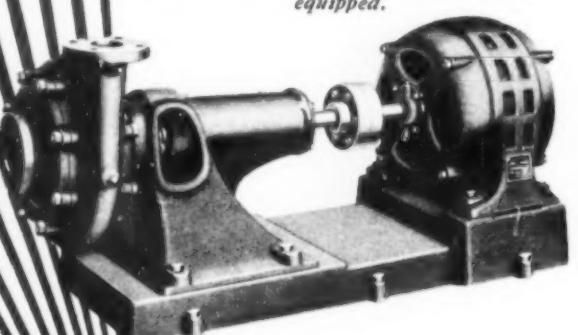
The Fairbanks-Morse Self-Oiling Power Pump. Two places to oil. Also furnished for belt or engine drive.



F-M Duplex Piston Pattern Steam Pump  
for boiler feed service.



Typical of the wide range of F-M "Unit-Built" motor pump combinations. Both pump and motor are ball bearing equipped.



F-M Wood Trash Pump for handling stock or fluids containing solids or foreign matter.

THE thoroughness of Fairbanks-Morse manufacturing methods assures that any F-M Pump which you install will be up to specifications. But double assurance of satisfactory service *under field conditions* is afforded by the exhaustive tests that every F-M Pump is required to pass before leaving the factory.

Every Fairbanks-Morse Pump is tested *under actual working conditions* in one of the largest and most completely equipped hydraulic laboratories in the world. And this is but the final step in a series of equally exacting manufacturing operations which produce pumping equipment that will serve you better and longer.

From the comprehensive Fairbanks-Morse line, "field tested" equipment may be selected for solving practically all pumping problems. Bulletins covering F-M Pumps to meet your requirements will be sent promptly upon request.

FAIRBANKS, MORSE & CO.  
900 S. Wabash Ave., Chicago  
32 branches at your service throughout the United States



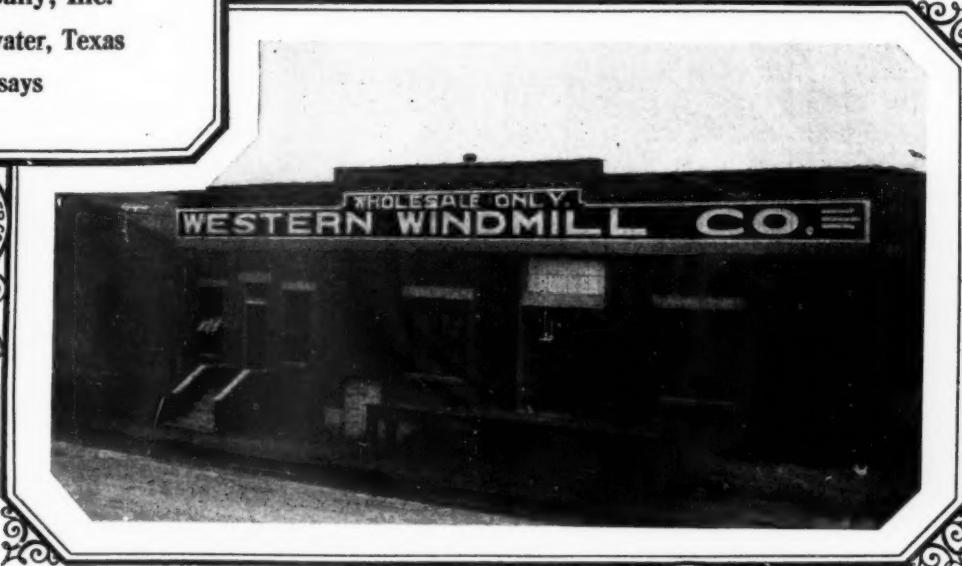
OPA40.2



FAIRBANKS  
PUMPS & MOTORS

**TALK NUMBER FOUR BY A PROMINENT DISTRIBUTOR**

Mr. Palmer Leeper  
Treasurer of  
The Western Windmill  
Company, Inc.  
Sweetwater, Texas  
says

**"THINK -**

Above - The Western Windmill Company, Inc. of Sweetwater, Texas. This company's services are of a definite economic value to the prosperity of its business territory.

**T**HINK of the economic waste to consumers of Industrial Supplies if they had to interview all the salesmen of all the manufacturers who make materials they use. They couldn't do it, and even if manufacturers had a sales force large enough to make the calls it would make the prices prohibitive.

We do that for our field which makes us an economic necessity—which makes our recommendations worth while, and we recommend Republic's Belting—Hose—Packing—Molded and Lathe Cut Goods."

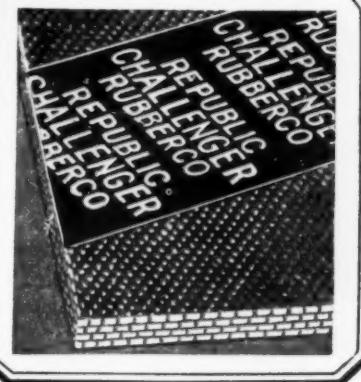
The above statement is characteristic of those made by prominent distributors all over the country. It explains in part how the Industrial Supply Distributor, helping to solve the important problem of broad markets and economical distribution, upholds high quality, maintains fair prices and saves needless efforts on the part of both consumer and manufacturer.

**THE  
REPUBLIC RUBBER CO.**

Youngstown  
Ohio



Write for a sample



Challenger Transmission Belting—a square edged belt without seams to open up—with body sufficient to hold belt fasteners—with very little stretch and a gripping power that reduces power losses caused by slippage.

Recommended for heavy or troublesome drives.

**REPUBLIC means  
the Best Mechanical  
Rubber Goods**





## The Job is done —to stay done!

The permanence of service without maintenance is yours if you install **FA** Panelboards. Made in all types and sizes, there is a model to fit every need. Each is standardized in itself and with the **FA** Steel Cabinets.

Factory executives realize the safety features, the stability and "lasting-as-long-as-the-building" qualities of **FA** Panelboards and use them throughout their plants.

There is an **FA** man near you to give full information and help you to select the proper panelboard or switchboard to use. Send for the **FA** Catalog No. 45. No obligation incurred.

**Frank Adam**  
ELECTRIC COMPANY  
ST. LOUIS

### DISTRICT OFFICES

Atlanta, Ga.  
Baltimore, Md.  
Boston, Mass.  
Buffalo, N. Y.  
Chicago, Ill.  
Cincinnati, Ohio  
Dallas, Texas  
Denver, Colo.

Detroit, Mich.  
Jacksonville, Fla.  
Kansas City, Mo.  
Los Angeles, Calif.  
Memphis, Tenn.  
Minneapolis, Minn.  
New Orleans, La.  
New York, N. Y.

Omaha, Nebr.  
Philadelphia, Pa.  
Pittsburgh, Pa.  
San Francisco, Calif.  
Seattle, Wash.  
Tulsa, Okla.  
Vancouver, B. C.  
Winnipeg, Man.



Ask the **FA** Man

**GIVE Red Bands  
YOUR HARD JOBS**

Every Howell electric motor is distinguished by its Red Bands and the way it masters the hard jobs.

Ask any Howell user

**Howell Electric Motors Company**  
HOWELL, MICHIGAN  
SALES and SERVICE in PRINCIPAL CITIES

**What is Okonite?**

OKONITE PRODUCTS

- Okonite Insulated Wires and Cables
- Varnished Cambric Cables
- Okonite Insulating Tape
- Manson Friction Tape
- Okocord
- Okloom

OKONITE-CALLENDER PRODUCTS

- Impregnated Paper Cables
- Super-tension Cables
- Splicing Materials

In 1878, a year before Edison invented the incandescent lamp, THE OKONITE COMPANY began the manufacture of rubber insulated wires and cables.

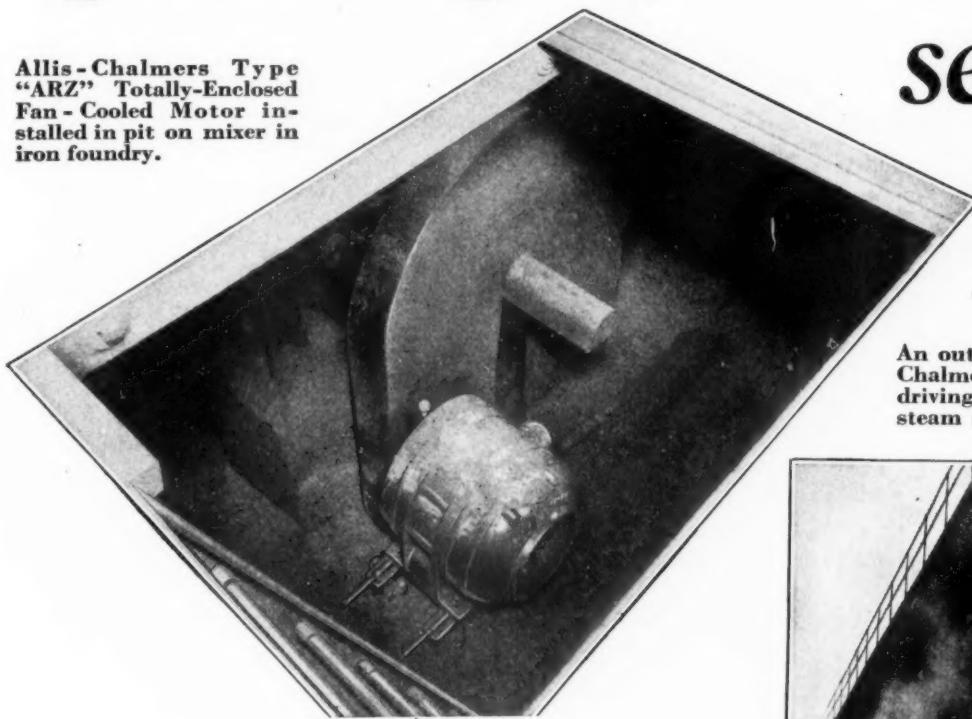
Even in those early days great care was used in compounding the rubber to produce a long-lived dependable insulation.

During the past half-century of development, the original policy of making only the highest quality of product has been followed. Refinements have been made, new products have been added, all of which depend for their quality upon rigid adherence to the best practises and the unstinted use of the finest materials.

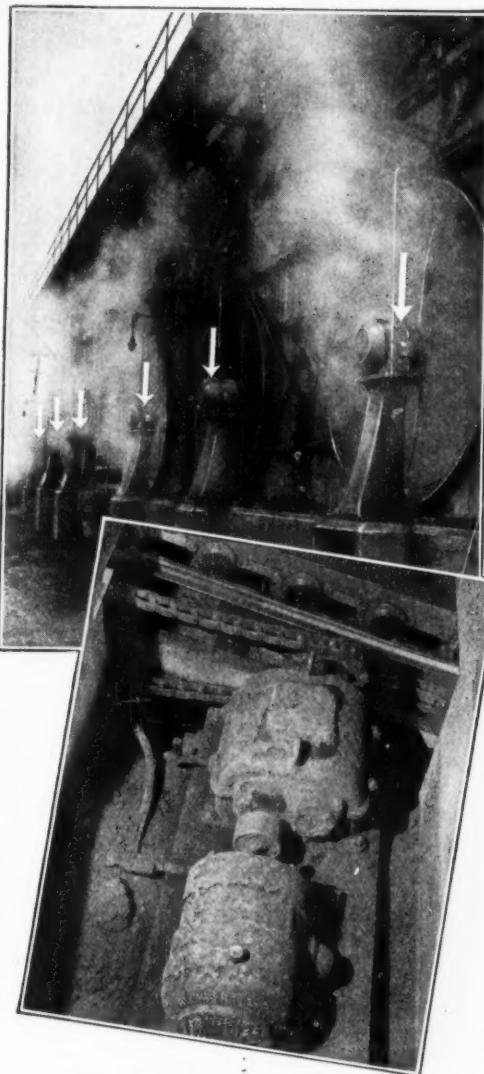
**THE OKONITE COMPANY**  
Founded 1878  
THE OKONITE-CALLENDER CABLE COMPANY, INC.  
Factories: Passaic, N. J.  
Paterson, N. J.  
SALES OFFICES:  
NEW YORK CHICAGO PITTSBURGH ST. LOUIS  
BOSTON ATLANTA SAN FRANCISCO  
BIRMINGHAM LOS ANGELES SEATTLE DALLAS

# Speaking of severe service-

Allis-Chalmers Type "ARZ" Totally-Enclosed Fan-Cooled Motor installed in pit on mixer in iron foundry.



An outdoor installation of Allis-Chalmers Type "ARZ" Motors driving cooling tower fans. Note steam surrounding motors.



WHERE are the "severe service" jobs for motors in your plant? Wherever they are, and whatever the motor problem presented, there is an Allis-Chalmers Motor to efficiently handle it.

The illustrations show some of the jobs the Allis-Chalmers Type ARZ Totally-Enclosed Fan-Cooled Motors are handling.

The solid cast iron bearing housings are designed as complete enclosures in these motors. These housings carry the rotor and are fitted with apertures for taking air gap measurements. By means of this design the separately attached coil enclosing devices with their auxiliary seals are avoided. The grease-packed bearings are the only shaft seals against the interchange of inside and outside air.

The stator windings and rotor and all parts subject to destruction are thus sealed against the entrance of dirt or dust.

These Allis-Chalmers Totally-Enclosed Fan-Cooled Motors will remove the "grief" from your motor operation where severe conditions exist. Maintenance becomes negligible and the uninterrupted service required in the modern industrial plant is assured.

**ALLIS-CHALMERS MFG. COMPANY**

Milwaukee, Wis.

*District Offices in all Principal Cities*

Type "ARZ" Motor driving an apron conveyor under a shake-out pit in a large steel mill.

# ALLIS-CHALMERS MOTORS

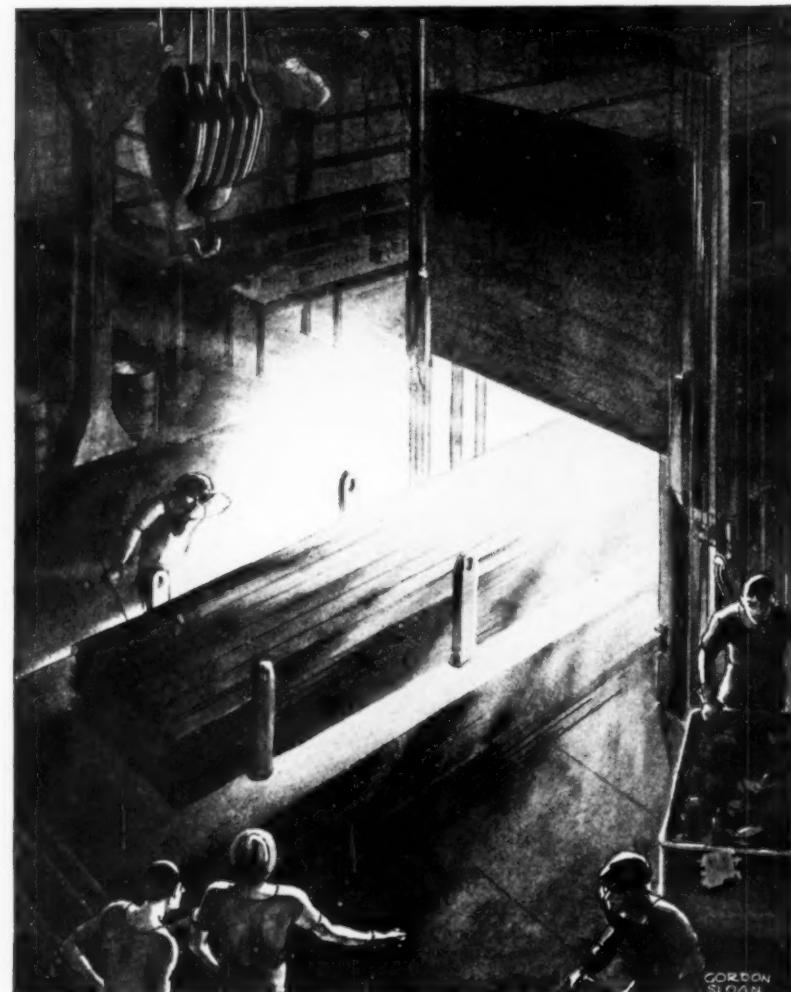
*Turning  
High  
Temperatures  
into High Grade  
Products*

The application of electricity to industrial processes has opened up broader avenues to economical manufacture. Its advantages in many lines show themselves in a more uniform and better product, fewer rejections, increased output, lower maintenance costs, and better working conditions

In the modern electric furnace, heating elements can be placed exactly where needed—like pictures hung on walls. The heat can be near or far from the pro-

duct to be treated. Electric temperature control is positive and unvarying. Electric heat is clean —there are no combustion fumes, nor dust, nor gases.

The increasing application of electric heat for better results in many manufacturing operations has come about through research and design in which Westinghouse has co-operated with engineers of all industries. Westinghouse builds a complete line of industrial heating apparatus, from small space heaters to vast metal-treating furnaces.



GORDON SLOAN



ELECTRIC POWER BUILDS BUYING POWER

**Westinghouse**

# for 10 STONE & WEBSTER BOSTON MASS.

Big jobs, big names and Northwests go together. From Seattle to Suez engineers have heard of Stone & Webster and know of this firm's reliability.

*It is significant that  
they own 10 Northwests!*

#### NORTHWEST ENGINEERING CO.

The world's largest exclusive builders of gasoline, oil burning and electric powered shovels, cranes and draglines

1733 STEGER BLDG. - 28 E. JACKSON BLVD.  
CHICAGO, ILL., U.S.A.

#### Northwest Engineering Co.

1100 Milby St.,  
Houston, Tex.

816 Howard Ave.,  
New Orleans, La.

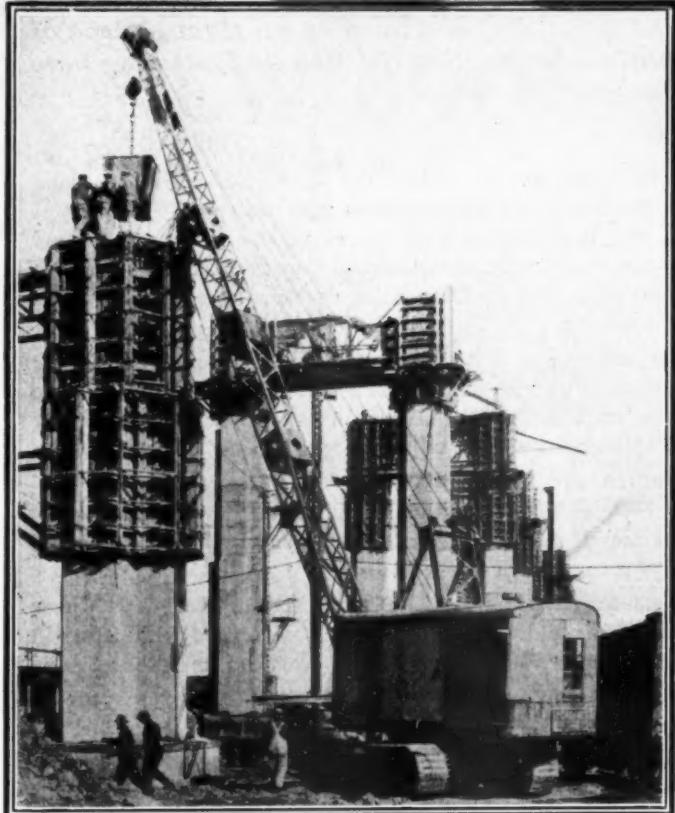
351 Whitehall St.,  
Atlanta, Ga.

393 N. Main St.,  
Memphis, Tenn.

1221 S. Lamar St.,  
Dallas, Texas

1325 Mockingbird Ave.,  
St. Louis, Mo.

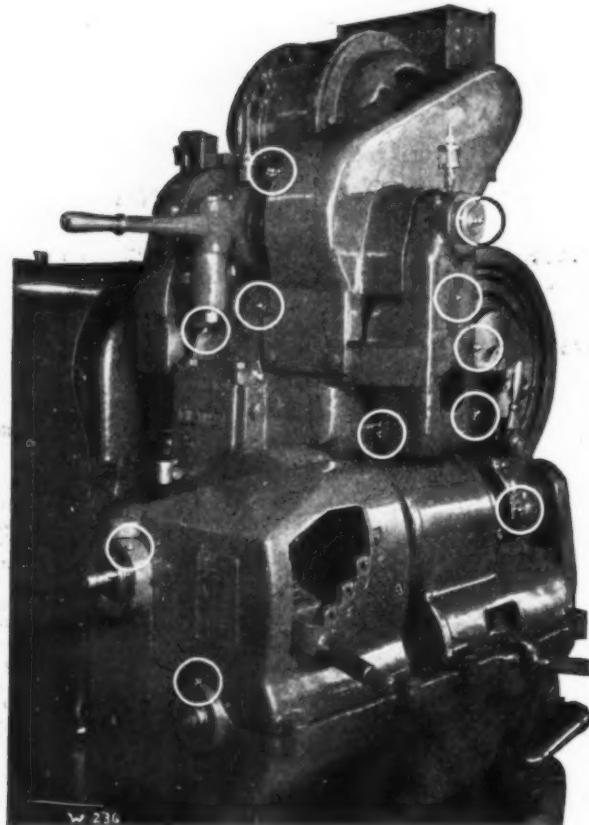
5 Briarwood Rd.,  
Charlotte, N. C.



MR 4-10-Grey

# NORTHWEST

# Subricated or not Lubricated?



*"We changed from the old method of the grease cup when we found in actual service that bearings lubricated by the old method were NOT LUBRICATED and we experienced considerable trouble in bearings running hot, dry, and burning up through lack of attention. In adopting the Alemite System we have eliminated this entirely."*

THIS portion of a letter from an official of The Cleveland Automatic Machine Company is, of course, self-explanatory.

But it is so typical of the machine experience of many manufacturers that it serves as important evidence of the need of Alemite High Pressure Lubricating Systems wherever production is on the move.

The installation of Alemite Systems is not expensive. Neither does it take up valuable production time. Alemite installations may be made while machinery is in use. Alemite Lubrication is done with machinery at production speed.

You can save the cost of Alemite installations and earn a handsome profit on them THE FIRST YEAR—and from then on. Figures prove that Alemite systems save 80% on machinery repairs and 50% of present lubricating costs.

Conduct your own test with Alemite in your own shops. Check one machine or a group of machines so equipped with others in parallel service. We will furnish cost forms and complete information for such a test. Find out first hand just what Alemite can do. That is all the "selling" you will need or get!

Alemite Corporation (Division of Stewart-Warner), 2686 N. Crawford Ave., Chicago, Ill.

ALEMITE CORPORATION (Division of Stewart-Warner)  
2686 N. Crawford Ave., Chicago, Ill.

Please send me full details of Alemite Industrial Lubrication.

Name.....

Address.....

City..... State.....

**ALEMITE**  
Industrial Lubrication

# MORSE FLEXIBLE COUPLINGS

*Remarkable for their Flexibility,  
Simplicity, ease of Uncoupling  
and Safety . . . . .*

*Absorb Starting Shocks*

*Dampen Vibration Bumps and Rattles*

*Reduce Wear on Bearings*

*Compensate for Minor Misalignments*

*Take Care of End Play*

*Lower Maintenance and Replacement Costs*

*Promote Long Continued,  
Trouble-Free Operation*

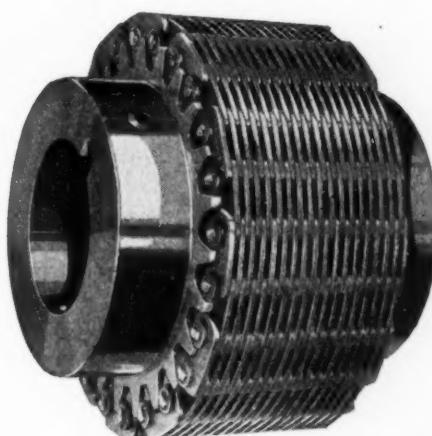
## NEW BOOK

*Bulletin No. 37*

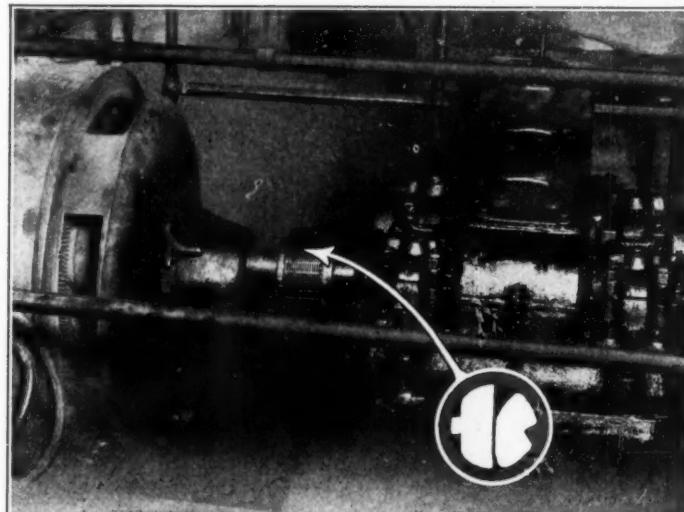
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## A Part of MORSE Power Transmission Engineering Service

The Morse Flexible Coupling has been perfected as a part of the wide and efficient Morse Power Transmission Engineering Service. Morse Engineers, located in principal cities, are ready to apply their experience in power transmission to your coupling problems, as they have for years assisted and advised on chain drive equipment and other power transmission problems. Call in a Morse Engineer.



*The Morse Flexible Coupling combines maximum flexibility with long life and enduring service.*



*Morse Flexible Coupling connecting 90 H.P. motor to calender through speed reducer*

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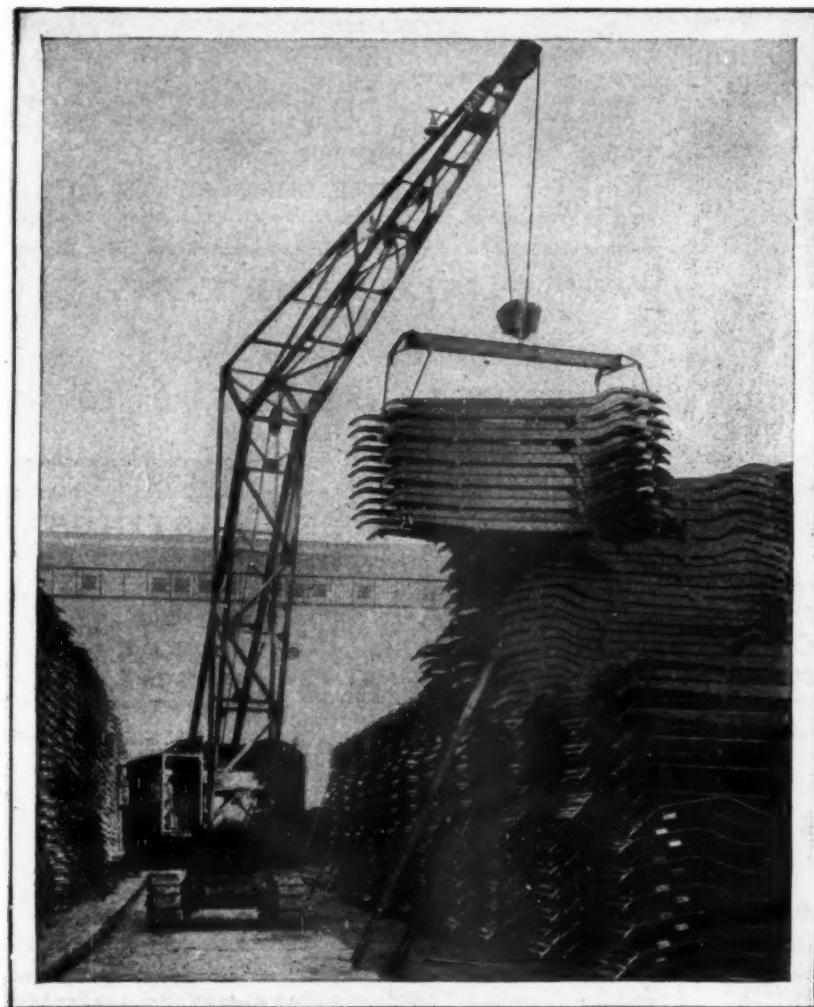
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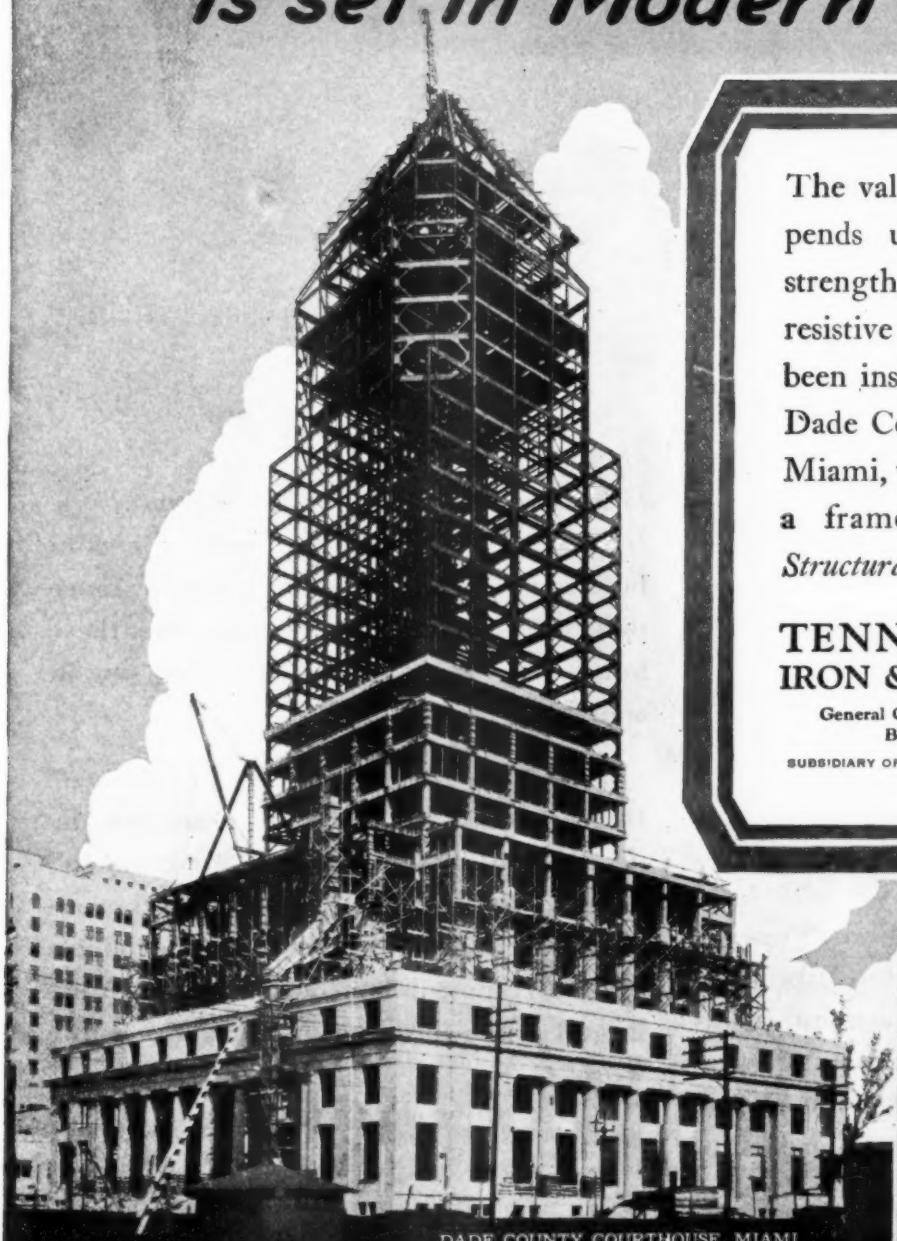
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SUBSIDIARY OF UNITED STATES STEEL CORPORATION



# TENNESSEE STRUCTURAL STEEL

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This company has been operated and will continue as a separate division with its own administrative staff and selling agents. That it has been successful, is shown by the fact that 1929 was the most profitable year in its history.

At the time "Milwaukee Crane" was acquired, its name was changed to Milwaukee Electric Crane & Hoist Corporation. It was decided that, in addition to cranes, Milwaukee would build and market a line of electric hoists which has been in the process of development for a period of several years.

This line of hoists, as now developed, is the joint product of the engineering skill

of both "P&H" and "Milwaukee" engineers. It embodies all the experience gained in building electric cranes and hoists for more than thirty-five years. Furthermore, these hoists have been thoroughly tried out in actual service.

You can depend upon the "Milwaukee" Hoist just as thousands of users are depending upon "P & H" and "Milwaukee" Cranes. And you may have the further assurance that back of "Milwaukee" products are the responsibility and resources of the largest crane building organization in the world.

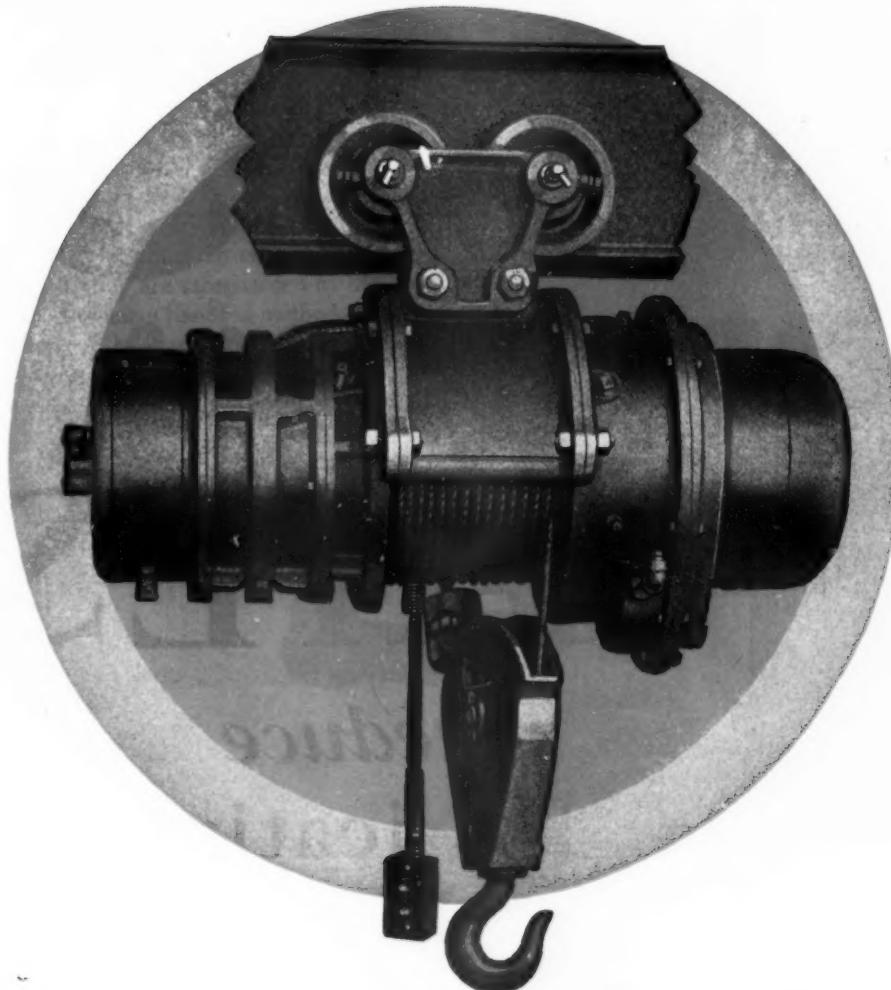
MILWAUKEE ELECTRIC  
CRANE & HOIST CORP.



PRESIDENT

M I L W A U K E E C R A N E S   E L E C T R I C  
*Division of*





## The New Milwaukee Hoist

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*Your request will bring complete information.*

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- All Adjustments Made on Outside**
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- All Loads Carried by Steel Members**
- Forged Heat-Treated Gears and Pinions**
- Forged Steel Trolley Wheels**
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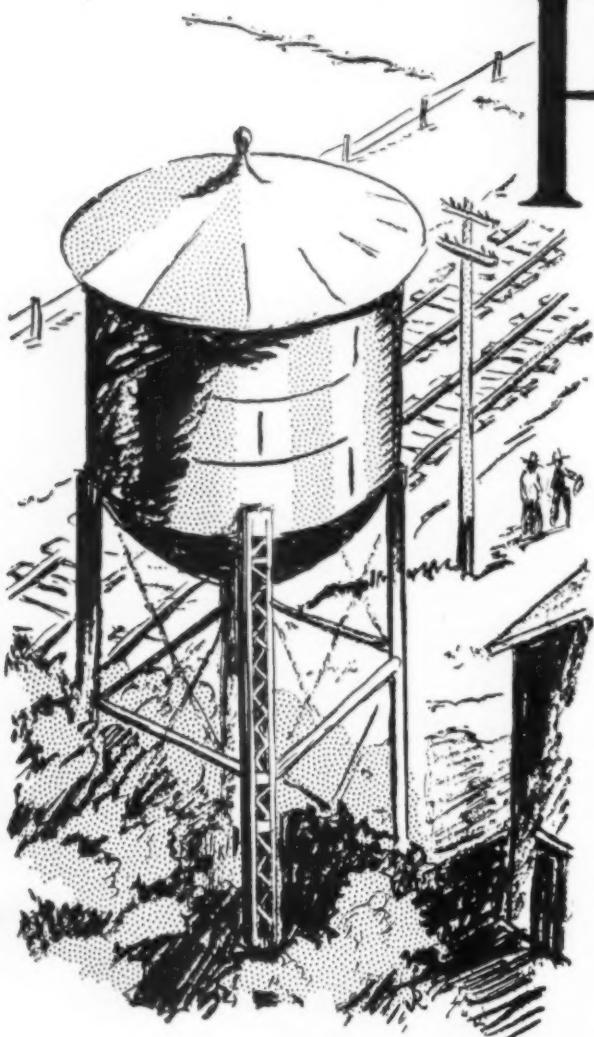
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"BE SURE IT'S

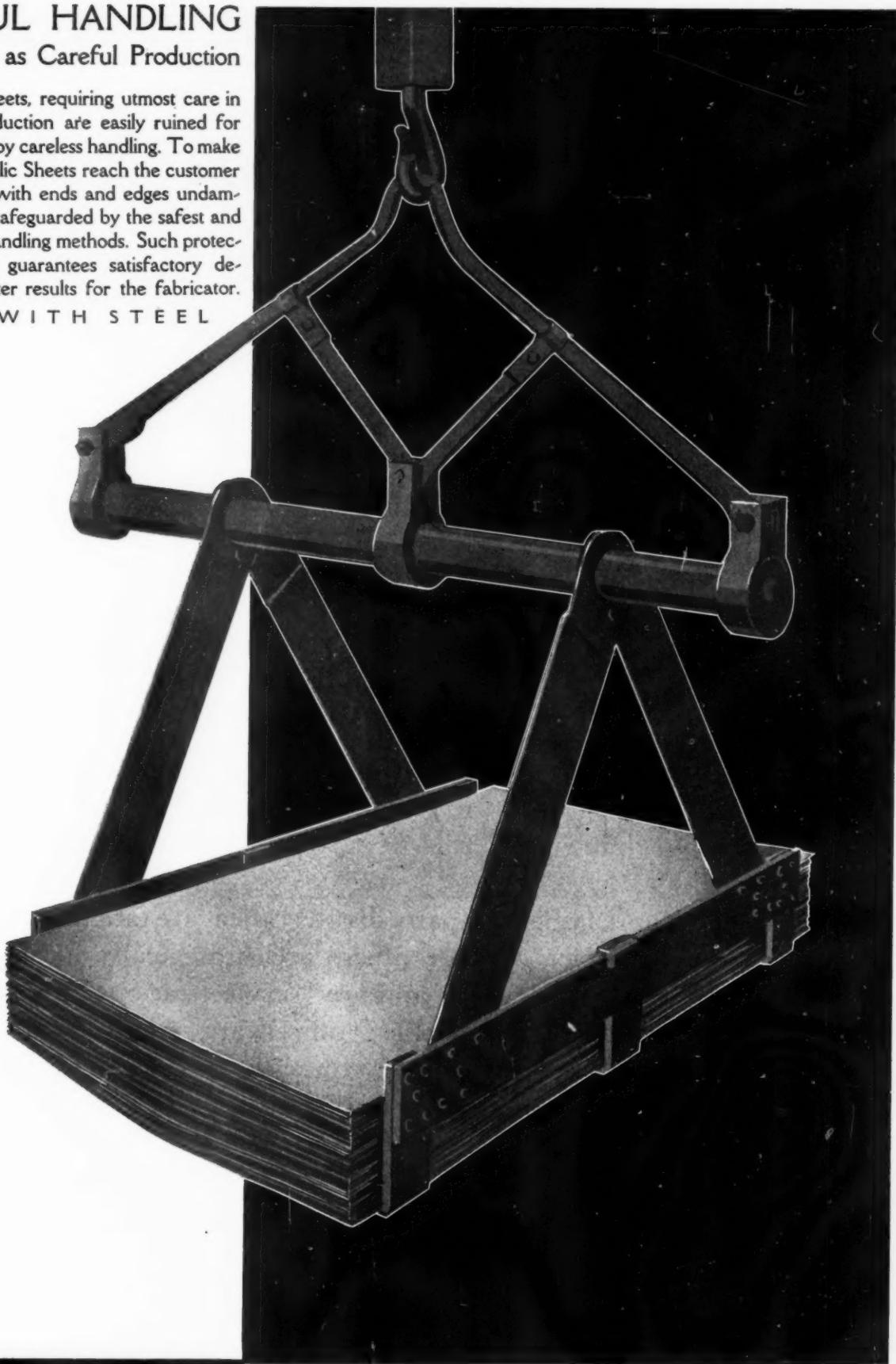
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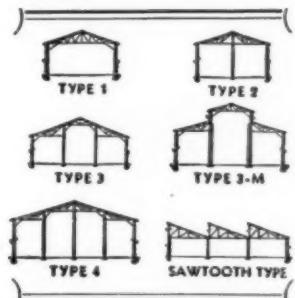
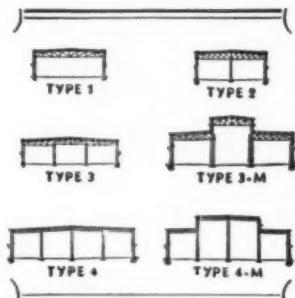
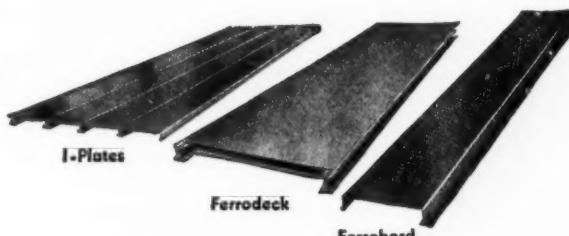
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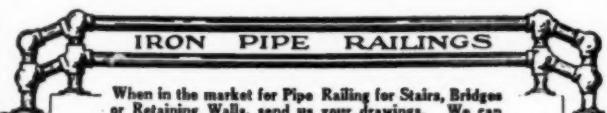
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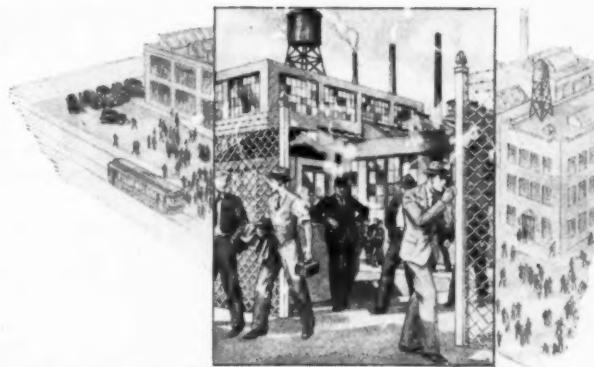
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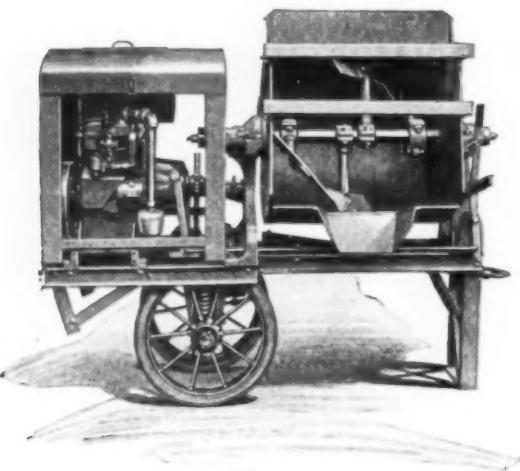


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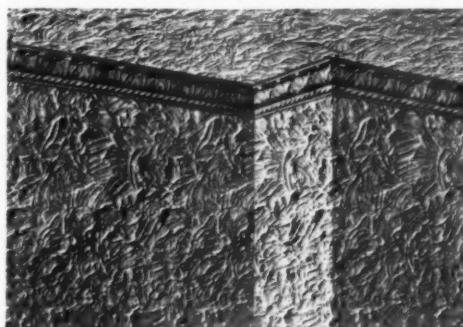


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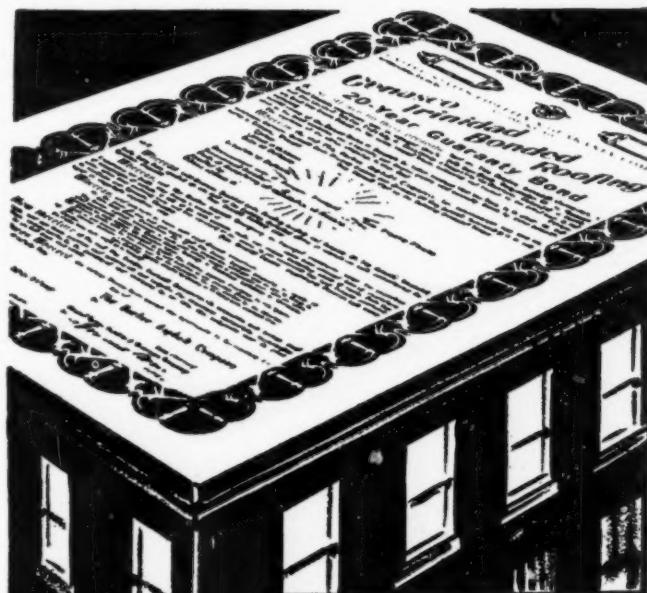
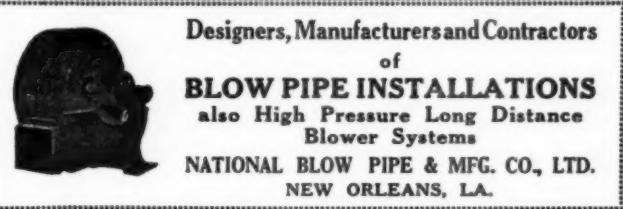
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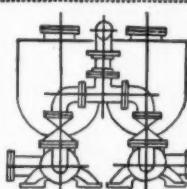
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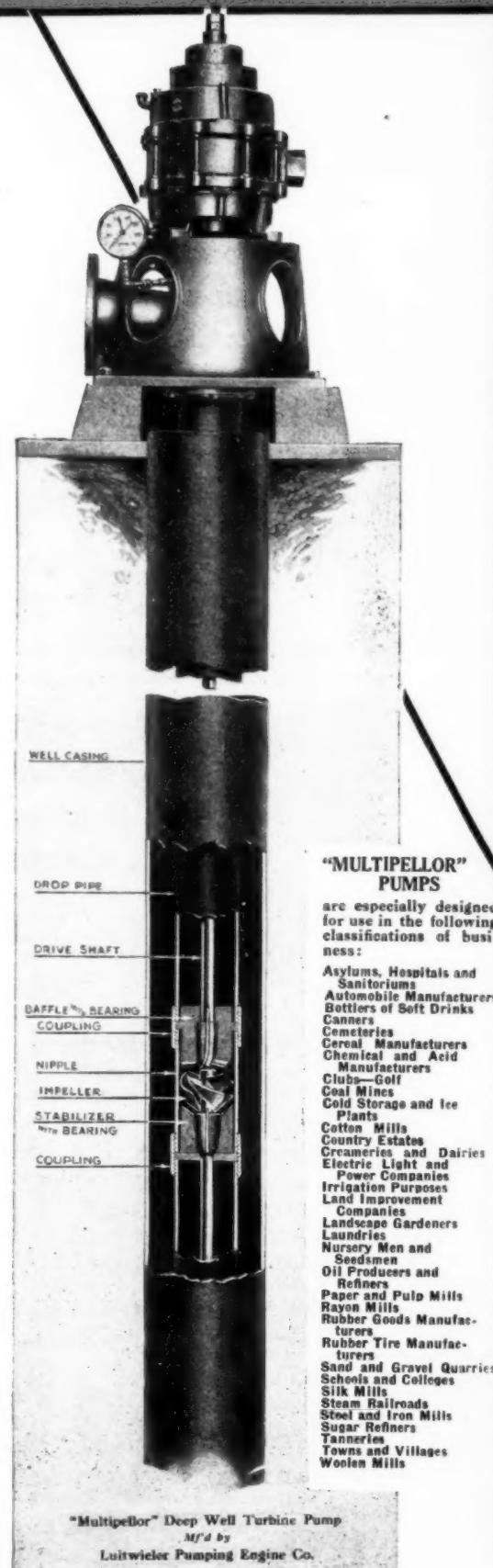
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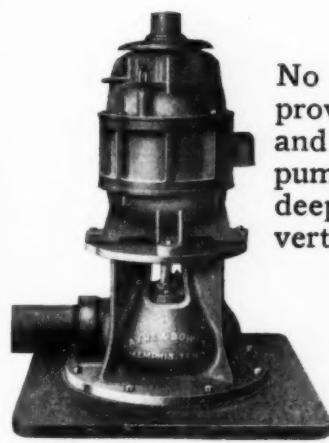
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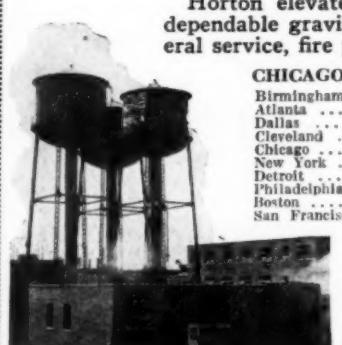
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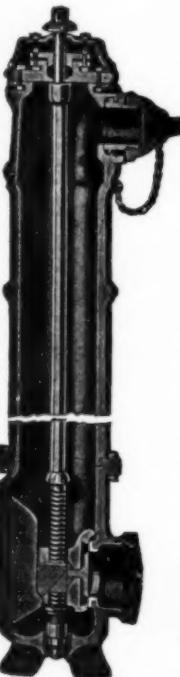
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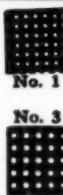
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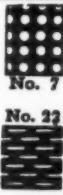
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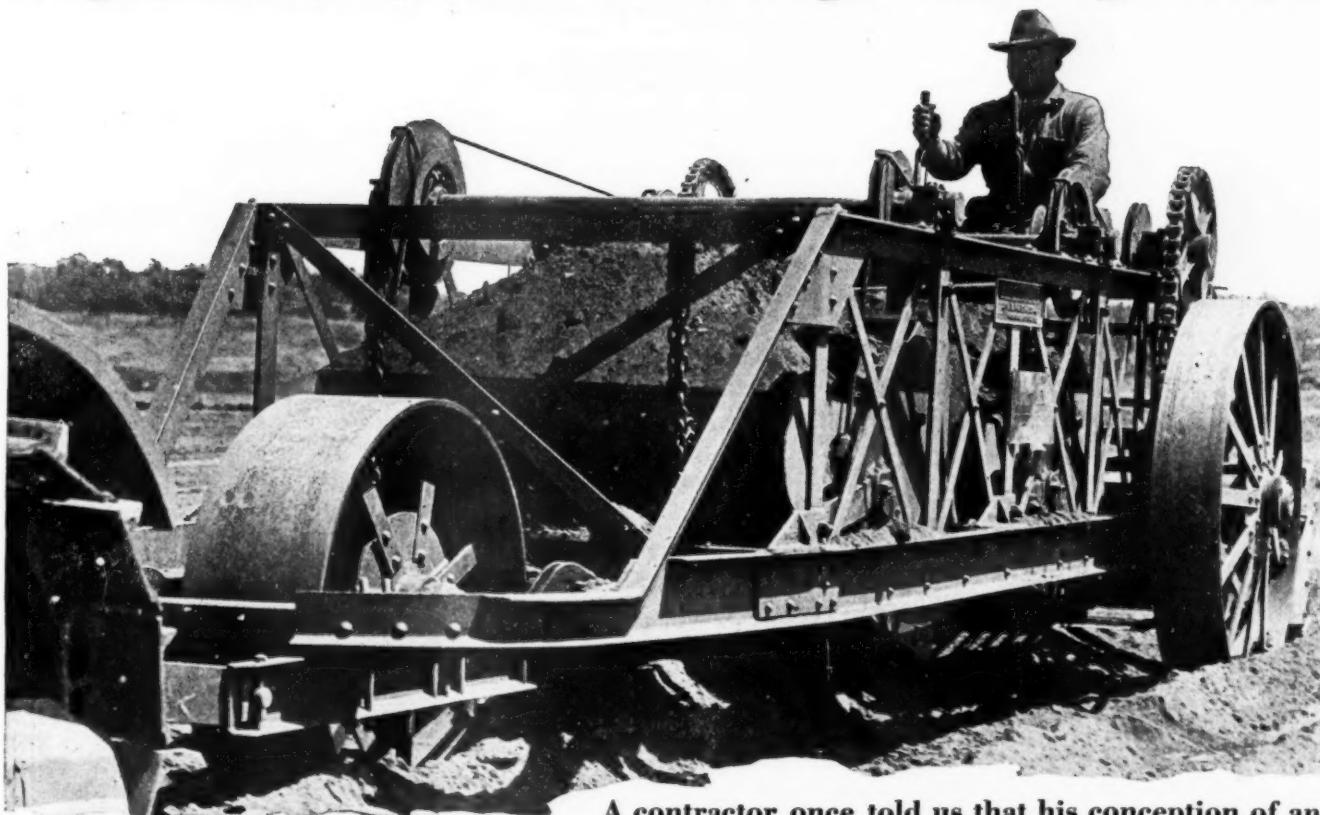
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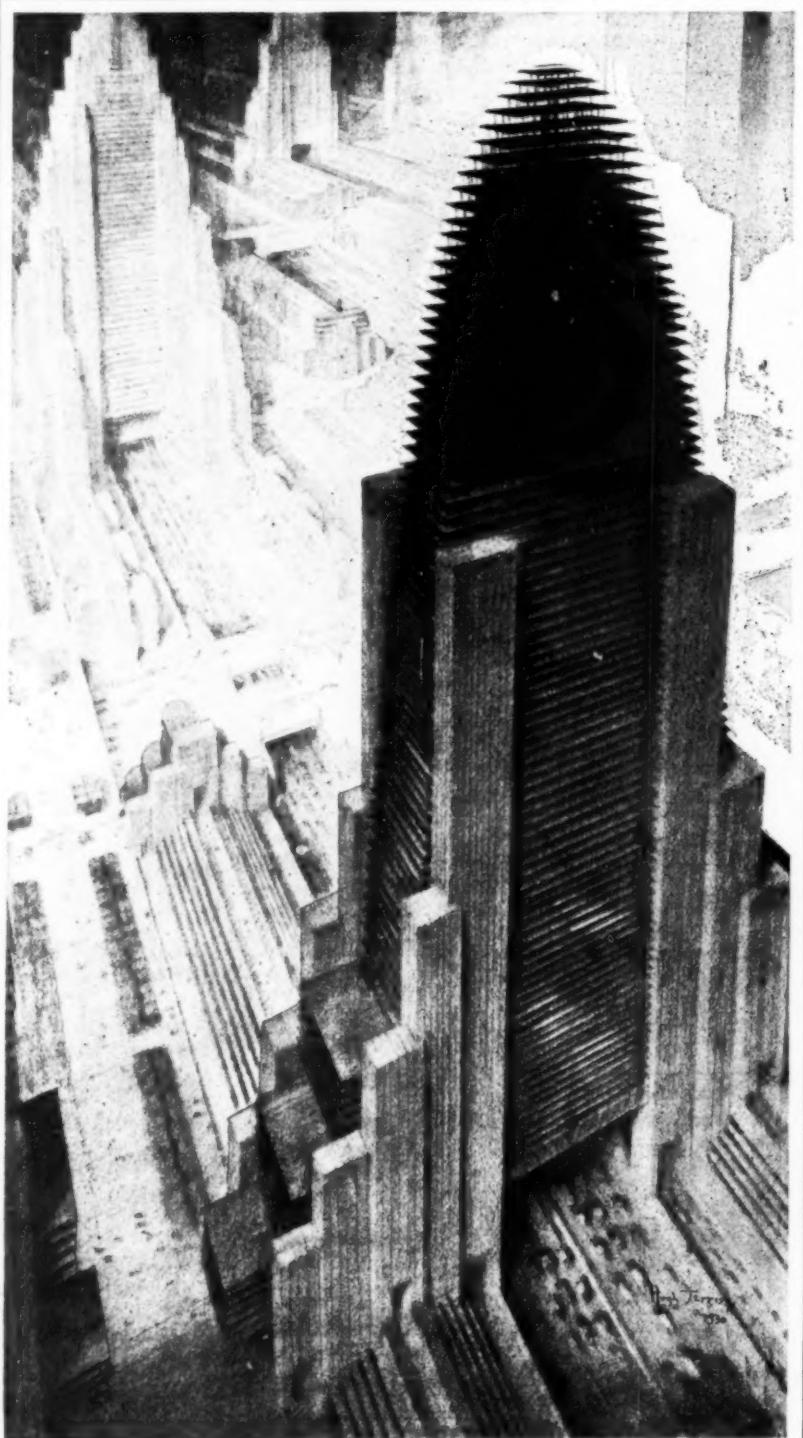
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## Installment Payments Proposed for Home Modernization

APPLICATION of the installment plan to finance home improvements and thereby to achieve the dual purpose of rendering old houses comfortable and making dull business active, is advocated by Julius H. Barnes, chairman of the National Business Survey Conference, in a recent article for the New York Herald Tribune Sunday Magazine.

"In developing new principles of financing," says Mr. Barnes, "we have failed to apply them to the most important element in the life of the individual, his home surroundings. We have just discovered that the so-called investment buying or installment plan, with which so many millions of Americans have had personal experience in recent years, has never had an opportunity to show how useful it might be in permitting a man to modernize his home, to acquire the comforts of extra rooms, better heating, the latest improvements in sanitary conveniences, and other things which the average American never thinks of acquiring unless he has the cash in hand."

What this would mean in terms of the nation is hard to grasp, but the figures Mr. Barnes quotes are suggestive. In the study of the construction program stimulated by President Hoover's efforts at stabilization, "a survey disclosed that there are no fewer than 11,000,000 dwellings in the country which are twenty years old or more." Mr. Barnes then points out the fact that in view of recent improvement in plumbing, heating and other features of home design, construction and equipment, houses built 20 years ago and not since modernized are now old-fashioned.

We can illustrate Mr. Barnes' remarks by referring to the suburbs of one large city. In one district, built up during the past 35 years, houses now old fashioned stand for months with "for sale" signs on them, while in a new sub-division the houses sell readily at profitable prices. In the older sub-division we have in mind two certain houses on adjoining lots. One of them, with six bedrooms and only one bath, has been offered for sale for months at a price considerably below cost, with no buyers. The other, with only four bedrooms, has been progressively modernized. It has four bathrooms and a downstairs lavatory; a thermostatically-controlled gas furnace and modern electrical fixtures and connections. It is a thoroughly comfortable house to live in. It has not been offered for sale; but should it be, it is likely it will bring a price to justify the improvements in addition to the comfort they are giving its occupants.

Modernization of the larger of these two houses would make it a very comfortable place to live, a more salable property—and would provide jobs for a good many men. If,

during 1930, 25 per cent of the 11,000,000 dwellings Mr. Barnes says are over 20 years old were modernized at an average expenditure of \$500—and probably very few of them could be really modernized for that figure—it would add \$1,375,000,000 to the year's expenditures for building. It was brought out recently that in 1929 the residential building fell \$1,000,000,000 below that for 1928. Such a program of improvement and modernization of old dwellings would more than make up the difference; and would go far to make 1930 a prosperous year for the whole country.

But "it is not merely the old house which may be lacking in the things which make for happiness," says Mr. Barnes. "There is the man who built a home comparatively recently, but who now realizes that he underestimated his requirements. Perhaps he did not finish off his attic and needs an extra room or two for growing children or for the servant he could not afford when he tackled the house. He may have skimped on bathrooms. \* \* \*

"If this man is financially minded it is, of course, easy for him to get the money for his needs. If the improvements are going to add to the value of the property he knows the bank will not hesitate to readjust the mortgage. It will simply mean increased interest charges if it is a long term mortgage or a small increase in the monthly payments if it is a building and loan trust. In either way he will practically be paying for the improvements in installments. Our problem, however, is with the man who is not financially minded to that extent or who for the best of personal reasons does not wish to increase the mortgage."

"The person who buys an automobile on notes for the first time usually marvels at the simplicity of the process. He talks only to the distributing agent, who prepares the papers, receives the initial deposit and delivers the car. The financing company does all the rest. There is no lost motion, because automobile financing is today one of the most efficiently developed cogs in our business machine. We should strive to apply some of that efficiency to the field of home improvements, so the painter, the builder and the steamfitter can deal with prospective clients as expeditiously as the automobile agent now does. \* \* \*

Without doubt, if we should modernize all the old houses that are worth modernizing and bring up to adequate capacity the new houses that need additions, 1930 would be the busiest building year of our history; but if we should undertake only 25 per cent of it, the result would be a powerful stimulus to all business. And the suggestion made by Mr. Barnes for financing such work on the partial payment plan ought to open the way for a considerable amount of improvement and additions.

## MUSCLE SHOALS ON THE GRIDIRON AGAIN

THAT famous political football known as Muscle Shoals is once more rolling and bounding about the congressional gridiron, its activity having been considerably stimulated in recent months not only by the airings before the Senate lobby investigating committee, but also by renewed efforts of opposing teams to kick a goal *a la* Rugby, or to pick it up and carry it for a touchdown, regardless of the rules of any particular game.

At this point, however, the analogy breaks down badly, for in the Muscle Shoals game there are numerous goals.

Senator Norris, long a star performer on the government ownership team, at one time set up as his goal government manufacture of fertilizer at the two nitrate plants forming a part of the property. But he became convinced that for the government to make fertilizer at the site would be a mistake, and with a courage we must admire, no matter how much we disagree with his government operation views, he acknowledged the error. In a letter to a Mr. Roulhac, published November 23, 1927, Senator Norris said:

"I cannot close my eyes to the fact that practically all (as far as I know all) of the unselfish and disinterested chemists and scientists declare that the cyanamid process is out of date and that we cannot use that process to make fertilizer and expect to compete with the present price of fertilizer on the market. This means that nitrate plant Number Two, as far as fertilizer is concerned, is completely out of the question. It is like asking the farmer to harvest his wheat with a cradle and not to use the selfbinder."

"Nitrate plant Number Two can make explosives and until we have built other plants of a more modern kind, we ought to keep it as an emergency, war-time proposition. Beyond that, it has no use whatever. Since nitrate plant Number Two was built, modern invention has decreased the cost of the extraction of nitrogen from the air about one-half."

The Senate has adopted the Norris bill for government operation of the power plant, practically the same bill that President Coolidge blocked for a time by a pocket veto. It is known to be in direct opposition to the views of President Hoover, but its enactment was undoubtedly made easier and more emphatic by the unsavory activities of the Cyanamid group. It would be a great pity if the activities of this one corporation and its associates should set up a reaction that would throw the plant into government operation when a reasonable contract might be entered into for its operation by private industry.

## SERVICE

A CURSORY glance through the advertisements of a recent issue of the MANUFACTURERS RECORD reveals the degree to which service is being featured by a great variety of corporations. In some of them, service stations are featured as one reason for purchasing the equipment; with service stations scattered about, repairs could be quickly made. In others service was rendered in advance of a sale. For example, the power companies have industrial departments which will aid corporations in the selection of factory sites suited to their needs. Dealers in steel and other building materials advertise the service of prompt delivery rendered by one of their many warehouses; "Address the nearest plant." Manufacturers of highly competitive machinery advertise engineers whose business is to analyze your problems and advise which of their types will best meet your needs; "Call him in." Sometimes it is merely the long and faithful service to be expected from the product; at other times it is the ability of a corporation to meet any needs within a very wide range of products; "Investigate our ability to serve you."

There is not a new thought in any one of these advertisements. That is the point we are making. They merely go

to illustrate the fact that *service*, in one form or another, being the final object of every business of every name or nature, service today is the most widely advertised of all forms of value. Service merely as service; service in the selection of a commodity; service in the maintenance of a commodity; service in the form of speedy delivery; service to be rendered by the commodity; and finally, the service rendered to both the reader and the advertiser by the advertisement itself. In the last analysis it is service that is desired in every purchase; and the reliability of the service depends upon the integrity of the firm that renders it.

## REMARKABLE RESULTS IN EXPERIMENTAL FARM WORK IN THE SOUTH

COL. HARVIE JORDAN, managing director of the American Cotton Association Better Farming Campaign, in a letter to the MANUFACTURERS RECORD refers to the work of that organization in bringing about a very much larger production of cotton and corn per acre on some hundreds of experimental farms throughout the South. In the course of his letter Col. Jordan writes:

"Profit in cotton growing is a matter which each individual farmer must work out, and they are ready and willing to be trained in practical methods which improve their individual and collective efforts. My great difficulty is in securing funds to expand the work and am forced to decline hundreds of farmer applications for membership."

"Unfortunately, business and industry appear to think the Federal Farm Board can and will solve every department of our farm life, but the Farm Relief bill only provides funds for marketing crops after they are produced. The bill should be amended, as the primary problem of the cotton farmer is economic production through restricted acreage, so as to increase acre yields at a lower cost of production."

"I have read the articles in the MANUFACTURERS RECORD from Mr. Coker and others urging establishment of colonies for farmers by Federal appropriation and supervision, but these colonies, if established, would be of value only locally. I am informed that President Hoover does not approve an appropriation for such purposes. We need to press forward sound and practical systems of farm relief in every county and on every farm to reach and benefit the great masses of farmers."

A statement of the results of this campaign last year is published elsewhere in this issue. The article by A. B. Bryan, of Clemson College, discusses success of the work on hundreds of test plots in the raising of cotton and corn handled on an entirely separate basis or plan from that of the American Cotton Association. Taking these statements separately, or jointly, it is shown that practically the same methods of intensive cultivation and high fertilization can be made very largely to increase the yield of cotton and corn per acre, bring about a very great lessening in the cost of production, and a necessarily increased profit.

So vitally important to the whole South, and for that matter to the whole country, are these experiments that there ought to be no slackness whatever on the part of business men of this country in contributing freely to the work. These are activities which it seems to us are of infinitely more value than the proposed Federal colonies being urgently advocated by many men of high standing in the South. These colonies, we believe, could not possibly reach as many farmers as are being reached by the hundreds of actual tests on experimental plots in many Southern states.

These independent experiments by individual farmers can be made, in connection with the agricultural colleges of the South, a means for completely revolutionizing Southern agriculture. Well may the cotton manufacturers of the country, the great industrial organizations, bankers and others contribute freely to the work which shows such promise in furthering the agricultural advancement of the South.

## ENORMOUS DEVELOPMENT OF AUTOMOBILE INDUSTRY AND PROSPECTS FOR THE FUTURE

ALVAN MACAULEY, president of the National Automobile Chamber of Commerce, in a recent statement said that during 1930 the automobiles of this country will travel to the extent of 156,000,000,000 miles. "This amazing total of mileage," said Mr. Macauley, "will be covered on gasoline-propelled wheels in a single year, more than 4000 times the distance from the earth to the planet Mars. These figures also present a picture of the opportunity and the work which lies ahead of the industry when we recall that there is a country larger than the United States, with a greater population and rich in natural resources where, excepting only a comparative handful, all the people are born, exist and die without ever leaving a radius of twelve miles—China."

China is a country with over 400,000,000 people, but China is waking up to highways and to automobiles.

"This development of motor transportation in America," said Mr. Macauley, "is carrying this nation to the heights of personal freedom which is now being eagerly sought by other countries. Some day gasoline and motors may free even the people of China of the shackles which bind them to their small areas of life. Not until then will the automobile industry begin to see a full measure of accomplishment. The manufacture of automobiles is one of the country's largest industries and everything connected with it, therefore, takes on an economic and social significance far exceeding in importance that of any ordinary mercantile interest."

"The annual automobile displays help to keep the people of America informed of the tremendous work constantly being done to better the country's personal transportation. It is one part of the great advertising activity that has aided in making the manufacture of automotive vehicles the country's first industry, and in turn has given to America the opportunity of enjoying its billions of miles of freedom."

Mr. Macauley attributes the remarkable development of the industry to the comprehensive advertising which the manufacturers have been carrying on for years. Last year the manufacturers of cars, trucks and buses, according to Mr. Macauley, used 63,000 pages of advertising in leading newspapers, magazines and farm journals, not including local advertising in thousands of small communities. "The motor industry," he said, "believes in advertising as the most efficient aid to low cost distribution," and to this broad advertising and development of the automobile he attributed to a large extent the economic progress of the United States in the last ten years.

With a total of 26,500,000 or more motor vehicles in operation in the United States at the present time it is estimated there will be a demand for replacement of cars worn out to the extent of 3,000,000 a year. Exports are running at about 1,000,000 cars annually, and about 1,000,000 families are estimated to be the owners of two cars. The replacement market is the most important factor in this industry, says Mr. Macauley, for we are rapidly coming to a point where there will be a demand for at least 4,000,000 vehicles annually to replace worn out machines.

Mr. Macauley is probably correct in his estimate of the ever increasing demand for automobiles not only in this country, but throughout the world. It is a striking fact, almost incomprehensible, that millions of people who felt they could never own a horse and buggy, now feel compelled to own an automobile. Go to any large factory or building under construction and one will be impressed by the number of automobiles in evidence. The automobile is really a new

factor in human affairs. No one can measure its value to civilization and its influence on development of business.

This country with about 6 or 7 per cent of the world's population, has about 77 per cent of all automobiles in the world. But that condition cannot always remain, for other countries are fast grasping the influence of automobiles on business life and social activities, and they too will soon be entering on the automobile age on a scale far greater than we have yet seen.

Development of this industry means expansion of highways, great activity in building not only main highways throughout the country but smaller roads which will connect up with the big roads, creating a program of highway building that within the next few years will reach probably \$3,000,000,000 a year in outlay.

These developments will mean also an enormous increase in construction work in the erection of garages, machine shops to do automobile repair work, and great plants for turning out millions of automobiles annually.

In the early days of the automobile industry the MANUFACTURERS RECORD said this would mean the creation of a nation of mechanics, for every chauffeur and every boy or man who runs a car sooner or later becomes imbued with the idea that he must understand the mechanics of his car and be able to keep the machinery in good order. That prediction is being fulfilled. We are creating a nation of mechanics at the very time when development of power is advancing this country at such a rate that the mind almost staggers as one attempts to look forward to what is coming to pass in the next five or ten years.

## GROWTH OF FIRE INSURANCE IN THE UNITED STATES

WE have recently given some striking figures in regard to the development of life insurance. Another phase of the business which is of great importance is fire insurance, now one of the outstanding financial interests of the country.

A pamphlet issued by L. C. Jenkins & Company of Baltimore, "A Fourteen Billion Dollar Business," quotes President Ecker of the Metropolitan Life Insurance Company as saying that in 1927 "fire companies protect against the hazard of losses from fire over \$125,000,000,000," while Alfred M. Best, a student of fire insurance, in a recent address stated that "fire insurance companies licensed in New York State alone reported at the end of 1928 fire risks in force of over \$177,000,000,000, and other risks of \$51,000,000,000."

The first mutual fire insurance company, it is stated in this pamphlet, was organized in 1696, with a trademark of two clasped hands, while "ancient history suggests that marine insurance was in vogue among the Greeks and Romans as far back as 700 B. C." Twenty-two years before the first Continental Congress, Benjamin Franklin and associates in Philadelphia organized a fire insurance company which is still in existence.

Fire insurance like life insurance has made progress in the South through the organization of local companies which now have assets of over \$100,000,000. They received net premiums in 1928 of \$35,000,000. But this is small in comparison with the fire insurance business of the country, and there is room for still further advancement provided the companies are organized on an absolutely sound basis and are well managed in every respect, and in this way add to the financial progress and prosperity of the South.

The trouble with most men is not that they do not know the right; but that while they know the right they choose the wrong.—Chadwick.

## IS SILVER DECLINE RESPONSIBLE FOR DECLINE IN STOCK MARKET AND IN COMMODITY PRICES?

**I**N a recent editorial, the Herald Tribune of New York in discussing the decline in farm products, referred also to the decline in our commodity market as well as in the stock market, and said:

"It is impossible for half the stock market to exist on one price level and half on another, and a much lower level, and the anomaly in such a situation in commodities is even more apparent; for despite the refinements of our financial and monetary system, exchange within and among the countries of the world still resolves itself ultimately into a question of barter. When the money value of a number of the world's most important commodities is cut by one-third or one-half, the countries that depend for income on those commodities suffer, naturally, a corresponding loss in purchasing power; and sooner or later this is going to find reflection in the prices of the things which these countries buy. \* \* \* Nevertheless, if we were to nominate one commodity as the chief culprit we would have no hesitation in suggesting silver bullion. The falling prices of a large body of commodities which began in July, 1929, are largely explainable in terms of reduced purchasing power of such important items as silver, sugar, coffee and rubber. The drop in silver, which can be traced back to the middle of 1928, can be explained satisfactorily, however, on the basis of conditions affecting that commodity alone.

"Silver, in its year and a half decline, which had carried it roughly from 60 cents an ounce in 1928 to below 40 cents early this month, has been the victim of overproduction on the one hand and underconsumption on the other, both due to unusual circumstances. The bulk of the silver bullion is produced as a by-product of copper and other metals. Production, therefore, is responsive not to conditions in the silver market, but to those in the base metal market. Hence, declining prices failed completely to act as a brake on output. The causes of underconsumption included: (1) Debasement of silver coinage in England; (2) demonetization of the metal by Belgium; (3) the abandonment of bimetallism and consequent demonetization of silver by France; and (4) the gradual transition of India, one of the two greatest silver markets of the world, from silver to a gold exchange standard.

"Despite the fact that most of the more modern countries are veering toward the gold standard today, it is worth noting that half the world's population depends upon silver as its monetary token. One has only to ponder the effects of a 33 per cent decline in the value of gold in the course of a year to realize what a severe shock this break in silver bullion must have been to the entire commodity price structure."

Charles S. Thomas, an attorney of Denver, Col., for years widely known in connection with the silver situation, writes to the MANUFACTURERS RECORD as follows:

"The relation between the world price of silver and such agricultural commodities as wheat and cotton was emphasized over 50 years ago and since then, as long as the so-called silver question was an active one in our economic and political affairs. Shortly after the so-called Bland Silver Purchasing Act became operative, and which, as you know, made it compulsory upon the Government to purchase 1,500,000 ounces of silver monthly from the lowest bidder, the world price of wheat seemed to vary with that of silver; and, in 1893, when silver dropped more than 20 points after the closure of Indian mints to coinage, wheat and cotton followed suit. Indeed, in the campaign of '96, that fact was constantly emphasized, and almost as constantly challenged. Hence, your editorial sounds like the voice of a distant past, although it is as true now as it ever was that there is an inter-play of market values between silver and the two commodities and others, which is easily explicable by the fact that silver-using countries, whatever their legal standards may be, are large consumers of these commodities.

"If the price of silver remains at its present quotation, and I feel sure it will go lower, it will limit the production

of the metal to that of lead, zinc, and copper ores, of which it has long been a by-product. I do not believe that within six months from now any other silver-producing mines will be in operation. This is a dismal prospect for the miner as well as for the farmer, and the crusade against the metal will be crowned with final and complete success. Personally, I perceive no future prospect for it, and I shall not be surprised if an effort is made to melt up the silver coin reserves of the Treasury, thus following the example of India.

"It may be that the constantly increasing burden placed upon gold by modern financial and currency systems will force a reconsideration of silver, as ultimate money of redemption, although I doubt it. A writer in the February number of the Living Age so contends and calls upon Great Britain to lead a movement for that object, just as it originated and led the campaign for silver's destruction. My advanced age will soon retire me completely from active participation in this and other problems, but I feel sure that the pernicious consequences of silver's dismal plight will force the hand of the industrial world and result in a partial rehabilitation of silver as an indispensable agency in international monetary affairs."

## SALE OF ROUND BALE COTTON PRESSES TO PUBLIC ANNOUNCED

**A**NDERSON, CLAYTON & CO. of Houston, Texas, who have for several years been controlling the round bale system and baling of cotton under the brand of ACCO, have made one of the wisest possible moves for the welfare of the whole cotton trade. The value of the round bale is so great and so revolutionizing in its possibilities that the MANUFACTURERS RECORD will shortly publish a history of the efforts made many years ago by John E. Searles and his associates, operating under the title of the American Cotton Company. At that time the round bale system was protected by patents and there was a fear that it could become monopolistic in its power.

Since Anderson, Clayton & Co. have been controlling this system they, too, have found it necessary, as Mr. Searles did, to hold the patents and only lease the presses, in order to safeguard the public from having bad round bales put on the market. A telegram to the MANUFACTURERS RECORD and a letter in connection with it, advises that the round bale system will now be thrown open to the public, and the company will sell round bale presses outright, while at the same time continuing their present system of leasing. This will be a move for the good of the cotton trade which can hardly be exaggerated in importance. It marks a new epoch in the handling of the cotton trade of this country for the good of the cotton grower, the cotton shipper and the cotton manufacturer in America as well as in Europe.

## OLD HABITS HARD TO BREAK

**S**ENATOR J. E. RANSDELL of Louisiana in a recent statement said:

"The South is rapidly becoming protective minded, and I think it would be foolish for the Democrats not to recognize this trend."

The MANUFACTURERS RECORD has long been proclaiming this truth and evidence grows that the people of the South are indeed to a very large extent beginning to realize the importance to them of a protective tariff.

Governor Smith, the democratic presidential candidate, took very advanced ground in favor of a protective tariff, and Mr. Raskob announced that he had received letters from Southern democratic congressmen promising to stand by the views advanced by Mr. Smith. And yet to a large extent the Democrats in the Senate and in the House have failed to live up to that standard.

## More Business-Like Farming

**Crop Contests, Aided by Business Men, Are Making Farming More Successful in the South, and Bringing About Fuller Realization of the Interrelation and Interdependence of All Classes**

By A. B. BRYAN, Clemson College, S. C.

**I**N South Carolina, as in various other Southern states, farming is being made a better business, safer because freer from haphazard methods, and more profitable because pitched on a more economical basis and conducted to produce higher yield of better quality at lower costs by means of crop contests. These contests, fostered by the agricultural extension service on the basis of experimental data resulting from the agricultural experiment station, are financed by various business groups whose members have recently been quick to realize that general prosperity rests upon the farmers' prosperity and that the farmers' prosperity rests upon larger and more economical yields of farm products of superior quality properly merchandized rather than dumped on the market. Most important as factors in promoting greater progress and surer success among the average general farmers of South Carolina have been the state-wide contests in cotton, corn, and sweet potatoes. Some outstanding data from these contests will show how advances are being made that are not only making more money for farmers and thereby for the general public but also bringing farmers, manufacturers, bankers and other business people into closer contact and a fuller realization of the interrelation and interdependence of all classes.

### *The Cotton Contest*

For four years the state-wide five-acre cotton contest has been attracting hundreds of cotton growers each year who are wisely seeking new facts and practices that will enable them and all other growers to produce bigger yields of more desirable staple at lower cost per pound. Many if not all of them are glad to join their fellows in a public service that will save cotton growing in the Southeast from suicide through following outgrown practices.

Since its inception in 1926 when \$2000 needed for prize money was supplied by a patriotic newspaper, "The State," the South Carolina Cotton Manufacturers Association has generously contributed \$2000 annually and has repeated the contribution for 1930. This money for state prizes has been supplemented for more local awards by banks, mills, merchants, and individuals. In 1929 these local offers included the following:

Kendall Mills, \$750 for farmers in

Newberry, Edgefield, and Saluda counties.

Greenville banks and mills, \$300 for Greenville county.

David R. Coker, plant breeder, \$2000 for Darlington county.

Greenwood bankers and others, \$650 for Greenwood county.

Similarly, various local prize funds are being provided for the contest in 1930 and these are adding much stimulus to the movement.

### *Some Results of Cotton Contests*

Production figures from reports of contestants in 1928 and 1929 are interesting proof that cotton can be produced economically and therefore profitably. The differences in yields and profits are due largely to the less favorable weather conditions in 1929.

### **SUMMARY OF 1928 AND 1929 RECORDS.**

	1928	1929
Average cost of production per acre	\$52.74	\$49.39
Average yield of lint per acre, lbs.	556	480
Average cost per pound of lint, cts.	5.5	7.1
Average yield seed per acre, pounds	1050	849
Average per cent of lint, all varieties	34.6	36.1
Average length of lint, all varieties, inches	1 plus 1	
Average profit per acre	\$86.51	\$51.39

The cotton mills of South Carolina annually consume 600,000 bales more of 15/16 to 1 1/16-inch staple than the farmers of the state produce. The purpose of this contest is to encourage production of this length of cotton, and Rule 5 of the contest states:

"In selecting a variety of cotton, contestants are requested to consider those varieties which they have reason to believe will produce one-inch staple. If staple falls below 15/16 inch the contestant shall not be awarded a prize."

It is often stated by farmers that there is no advantage in growing a variety of cotton that will produce one-inch or longer staple since a 7/8-inch staple variety will produce more lint per acre and sell for the same price per pound. Results in the cotton contest show that the better staples up to 1 1/16 inches give a larger yield per acre than 7/8-inch varieties and also have a higher value per pound.

Comparative figures on yields and sale values of various staples in 1928 and 1929 show that on an average the per acre value of 15/16-inch cotton was \$4.94 greater than that of 7/8-inch; 1-inch, \$9.34 greater; 1 1/32-inch, \$25.75; 1 1/16-inch, \$11.66, longer staples than

these showing a lower value than 7/8-inch cotton.

If many farmers do not receive the premiums due on the longer staples because of local marketing methods, these premiums being absorbed by middlemen through whom cotton passes, that is a merchandising fault which cooperative marketing direct to consuming mills will remedy. Certainly many if not all the mills are paying the premiums and would be glad to have the farmers rather than others benefit therefrom.

### *Improving the Quality of Lint*

In 1926, the first year of the contest, 54.6 per cent of the lint produced on contest plots was 7/8 inch or less. In 1929 only 16.19 per cent was 7/8 inch or less.

The production of 15/16 to 1 1/16-inch staple by the contestants has increased as follows:

	Per Cent
1926	40.8
1927	61.9
1928	78.3
1929	79.8

During the four years of the contest over 3000 farmers have entered five-acre plots; ninety-five per cent of these plots have been planted with pedigreed or improved seed. Each contestant has become a source of good planting seed.

According to reports of the Bureau of Agricultural Economics, a higher percentage of South Carolina's crop was of desirable lengths, 15/16 to 1 1/16, than of any other Southeastern state in 1928 and 1929, as is seen below.

State	1928 Per Cent	1929 Per Cent
South Carolina	33.3	34.3
North Carolina	20.8	24.1
Georgia	17.4	10.8
Alabama	7.9	2.8

Though South Carolina leads the Southeastern states in producing the largest percentage of the crop in the desired staple lengths, local mill requirements in bales of these staple lengths is far from being filled. In 1928, South Carolina farmers raised 219,207 bales more of 13/16 and 7/8 staple than local mills consumed. In the same year South Carolina mills consumed 633,038 bales more of 15/16 to 1 1/16-inch staple than the number of bales of such staple produced in this state.

The mills of South Carolina consume more cotton than is produced in South Carolina annually. By producing those staple lengths that meet local mill requirements so that South Carolina cotton can be consumed in South Carolina mills, a great

step forward in the economical marketing of cotton can be taken. The cotton contest is leading to this much desired goal.

*The Corn Contest*

Average yield of corn in South Carolina for eight years, 1921-1928, was 14.5 bushels per acre, with other Southeastern states hardly any better. For the same period the United States yield was 27.7 bushels and for Iowa 39.5 bushels. During the same period the 4-H club boys of South Carolina made an average yield of 38.9 bushels.

Average costs of corn production in South Carolina total \$18.75 per acre, and it is clear that average yields of 14.5 bushels per acre are not economical or profitable. The five-acre corn contest was projected to encourage farmers to grow "more good corn per acre at a smaller cost per bushel."

A total of 498 farmers from 45 of the 46 South Carolina counties entered the contest and 270 completed and sent in records which clearly prove that good seed, intelligent fertilization and proper cultural practices result in good yields and encouraging profits. Note these interesting figures of averages of 270 reports:

Average cost per acre.....	\$22.12
Average yield bushels per acre.....	50.5
Average value per acre.....	\$52.51
Average profit per acre.....	\$30.58
Average cost per bushel.....	\$ 0.49
Average profit per bushel.....	\$ 0.57

The 12 prize winners averaged 89.3 bushels per acre valued at \$96.67, produced at a low cost of 34 cents per bushel, and showing a profit of 75 cents per bushel and \$66.45 per acre.

There was no magic used in accom-

plishing these profitable results so vastly superior to the very unsatisfactory state averages. Pure strains of corn varieties that have proven best by test; ample water-holding humus in well-conditioned soil; plenty of stalks per acre, that is, thick spacing; and liberal quantity of readily available nitrogen made good profits for these corn growers, and these things will make good profits for all Southern corn growers.

It is gratifying to note that for 1930 the Chilean Nitrate of Soda Educational Bureau will donate \$1000 for general prizes in the South Carolina Corn Contest, and that the Atlantic Coast Line Railroad Company will again give \$250 for prizes in counties served by its line.

*The Sweet Potato Contest*

With about 50,000 acres planted annually to sweet potatoes the crop is fifth in importance among South Carolina crops, and yet the carload shipments of marketable potatoes, 262 carloads in 1928, have been much less than in other states which have much smaller acreages. For example, New Jersey, Maryland, and Delaware with only one-sixth to one-third of South Carolina's sweet potato acreage send five to eight times as many sweet spuds to market. Georgia, from 100,000 acres, ships annually only six or seven hundred carloads.

The chief explanation of the small movement of sweet potatoes from South Carolina is that the average farmer has seemed unable to grow a large enough yield and high enough percentage of No. 1 potatoes to make it a profitable cash crop. This, despite the fact that

the crop is naturally adaptable to South Carolina soils and climate. The feeling that it would be possible by improved practices to increase the yields for even competition with other producing areas prompted the state-wide sweet potato contest which was initiated in the spring of 1929, and made possible by the cooperation of the South Carolina Sweet Potato Growers Association, which donated \$600 for prizes.

*Winning Yields and Encouraging Results*

About 300 sweet potato growers entered the contest and 180 turned in complete records, showing some interesting results as follows:

Highest total yield .....	672 bushels per acre
Highest yield of No. 1's..	378 bushels per acre
Average yield of No. 1's... .	176 bushels per acre
Average cost of production .....	\$ 58 per acre
Average net profit .....	\$125 per acre

The winner of the state prize, G. A. McCutcheon, a recent graduate of Clemson College, produced 468 bushels per acre, of which 378 bushels were No. 1's. The value of his crop was \$490 per acre, cost of production \$89, net profit \$401 per acre. The fact that the 180 contestants reporting averaged a yield of 300 bushels per acre of which 176 bushels were No. 1's, and that the average net profit was \$125 per acre, proves conclusively that profitable yields of sweet potatoes can be grown in South Carolina and other Southern states.

Suitable soil, ample fertilizer with a formula rich in potash, lots of plants per acre, reasonably early planting, are the most important considerations in making sweet potatoes an important cash crop for Southern farmers.

## Practical Work on Economic Problems in Cotton and Corn Growing in South

The MANUFACTURERS RECORD has received a copy of the 1929 Year Book issued by the American Cotton Association Better Farming Campaign. The important educational field work of the movement among cotton growers of the South was planned and inaugurated in 1923 by Col. Harvie Jordan, managing director, Atlanta.

Col. Jordan has been a cotton grower and student of the industry for many years, and the Year Book showing field results from the intensive culture of cotton and corn last year under his general supervision presents some interesting facts to the cotton industry. According to this book, in 1929 a total of 643 field demonstrations of cotton and corn were established and operated by selected farmers in counties of 10 cotton-growing states. Leading operators in six states produced their lint cotton at a net aver-

age cost of 4.84 cents per pound, while the average of all reports from 10 states shows average net productive cost of lint per pound to be 6.55 cents. The statement is made that these are the lowest productive cost figures ever obtained in so large a field of operation and without the offer of prizes to stimulate abnormally high yields. The record of corn yields on two-acre field demonstrations was also high, many operators reporting a harvest of 75 to 155 bushels per acre, while the average is shown to be 43 bushels per acre. The low cost figures for cotton compare with an estimated general average cost of 18 to 22 cents per lint pound over the belt, and the yields of corn compare with the general low acre average of 10 to 14 bushels.

General instructions were issued to each cotton grower to prepare the soil thoroughly, to use at least 500 pounds

per acre of a high-grade mixed fertilizer, plant good inch staple cotton seed, properly space the rows and plants, cultivate rapidly and often, use effective weevil control methods and apply from 100 to 200 pounds of sulphate of ammonia per acre in May and June. The same general rules applied to corn tests. Each farmer was required to keep a record of cultural methods employed, amounts harvested, itemized cost of production and sales value of products for determining net acre profits.

Following is an analysis of 328 cotton reports based on two acres each:

Average amount fertilizer, lbs.....	1,158
Average yield lint cotton, lbs.....	889
Average value lint and seed.....	\$182.89
Average cost production.....	\$ 79.23
Average net profit.....	\$103.66
Average net cost lint, per lb, cts.....	6.55
Average number visiting farmers.....	63

An analysis of 18 leading farmer operator reports, three from each of six

states, shows the following results for two-acre demonstrations:

Average amount fertilizer used, lbs...	1200
Average yield lint cotton, lbs.....	1282
Average yield cotton seed, lbs.....	2200
Average value lint and seed.....	\$280.84
Average cost of production.....	\$ 92.84
Average net profit.....	\$188.00
Average net cost lint per lb., cts.....	4.84
Average number visiting farmers.....	83

One of the operators, A. M. Adams, Cordele, Ga., produced 2198 pounds of lint cotton on two acres with a net profit of \$296.83. Figuring the market value of the seed, the lint on this demonstration was produced at a cost of approximately 3½ cents per pound.

In yields per acre the report shows

leading operators of the 315 corn demonstrations as follows:

	Bushels
W. H. Lavender, Weir, Miss.....	155
Harrington Lavender, Weir, Miss.....	129
A. P. Johns, Toccoa, Ga.....	107
A. W. Walker, Cleveland, Ala.....	100
R. S. Donald, Society Hill, S. C.....	88
T. B. Wiley, Blackshear, Ga.....	75
Average of 315 reports.....	43

It is to be noted that each demonstration whether of cotton or corn was operated at a substantial profit above cost of production. The method employed appears to have been good farm practice, backed by efficient cultural methods which, it is said, any farmer of ordinary intelligence can apply. Letters from farmers as published in the Year Book

endorse the intensive system of culture and state it to be the only solution of the cotton farmers' problems. The feature of the system is economic production and improvement of quality of the staple and adoption of balanced farming.

### May Erect 37-Story Building

Skouras Brothers Enterprises, St. Louis, Mo., are reported to have made a tentative offer to the Board of Education of that city, for the lease of a site at Ninth and Locust streets to erect a 37-story office building.

## Intra-Coastal Canal in North Carolina

**Extensions Under Way on Five Sections Which Cover 92 Miles and Involve Removal of 27,253,882 Cubic Yards—Cost of Project \$6,000,000**

By LOUIS T. MOORE, Executive Secretary, Wilmington Chamber of Commerce

Following completion of the Intra-Coastal canal as far south as Beaufort, N. C., the United States Engineer's Office is now actively engaged in extending it to the Cape Fear River at Wilmington, a distance of approximately 92 miles. Upon completion the work will represent an expenditure of about \$6,000,000 and will afford facilities for barges and light draft craft to follow an inland watercourse from North Carolina to Massachusetts, and beyond into the heart of New York state and the Great Lake region by utilizing waterways already provided in that section. Surveys have been made to extend the canal southward to Charleston, S. C., and beyond, with the ultimate object of reaching Florida and connecting later with the Gulf coast.

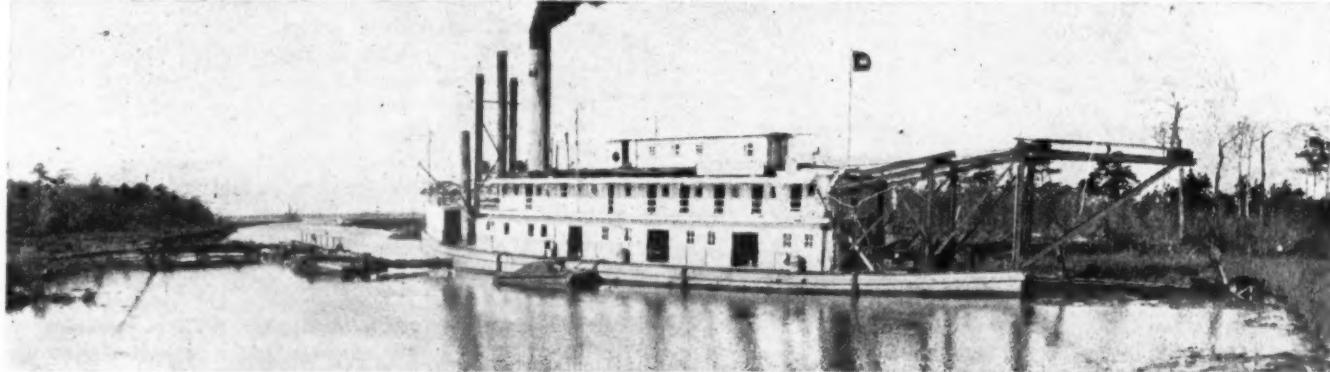
Such fine progress has been made that it is anticipated the project will have been completed within three years from the time of beginning construction. Major W. A. Snow, United States District Engineer, Wilmington, is supervising the

work. The extension now in progress has been divided into five sections for construction purposes as follows: Section 1, Beaufort to Swansboro; section 2, Swansboro to New River; section 3, New River to Wrightsville; section 4, Wrightsville to Seabreeze, and section 5, from Seabreeze to the ship channel in Cape Fear River. The removal of a total of 27,253,882 cubic yards is involved. Work is in progress on sections 1, 2 and 5 and contract was recently awarded for dredging section 4, with another contract soon to be awarded. It may be necessary to construct a tide lock in section 5 and studies have been made to determine this detail. Contracts have been awarded to the W. H. Gahagan Realty Co., Brooklyn, N. Y., for section 1; to the Atlantic, Gulf & Pacific Company, New York, on sections 2 and 4, and to the Waldeck-Deal Dredging Company, Miami, Fla., for section 5. Contract for a 225-foot bridge to carry the Carolina Beach highway across the canal was awarded to

Roanoke Iron & Bridge Works, Roanoke, Va., at \$87,500.

Dredging operations started in June, 1929 on section 1, 24 miles long and estimated to involve the removal of 5,366,250 cubic yards. In March of last year dredging operations started on section 2, 17 miles long, with 6,325,750 cubic yards to be removed, and on May 4 work began on section 5, 4 miles, involving the removal of 1,689,375 cubic yards. Section 3 is about 34 miles long and will involve the removal of approximately 12,285,000 cubic yards, for which contracts are expected to be awarded soon. Section 4 is 13 miles long and will involve removal of approximately 4,739,000 cubic yards.

When the canal has been completed it will be of distinct service to commercial interests of North Carolina and other states, the port of Wilmington especially affording fine facilities for the coordination of traffic with the Atlantic Coast Line and Seaboard Air Line railroads.



United States Government Dredge at Work on Intra-Coastal Canal

# \$90,000,000 in Pipe Line Projects

Completed in South and Southwest by One Firm in Four-Year Period

By

W.M. THOMPSON SMITH,  
Ford, Bacon & Davis, Inc.,  
New York City.

**I**N 1928 the volume of natural gas produced constituted approximately 75 per cent of the total volume of gas fuel produced and sold in the United States. Nevertheless, whereas the aggregate gross income of the gas industry in that year approximated \$875,000,000, the value of natural gas alone was only approximately \$364,000,000 or considerably less than one-half. These figures indicate the comparative economies to be derived from the use of natural as compared with manufactured gas and one great reason for the growth in its consumption which has more than doubled in the last ten years. Since the locations of the natural gas supplies of the country are fixed and in most cases far removed from the points where the fuel is required, such an increase in consumption has been made possible only by the construction in recent years of continually longer and larger natural gas transmission pipe lines and systems.

In this construction field Ford, Bacon & Davis, Inc., has played an important part. The firm has been almost continually engaged on such projects since 1923 when a line was constructed from the Viking gas field in the Province of Alberta, Canada, to the city of Edmonton, Alberta. Each successive construction project has presented new and individual difficulties and completion of almost every project has marked the establishment of new records as to size, length, operating pressure, capacity, construction time and other features.

## \$3,000,000 Canadian Project Completed in Record Time

**C**ONTRACT FOR the first natural gas

pipe line to be built by Ford, Bacon & Davis, was signed May 16, 1923, and

mission line of 10½-inch and 12-inch Dresser coupled pipe and 80 miles of distribution system.

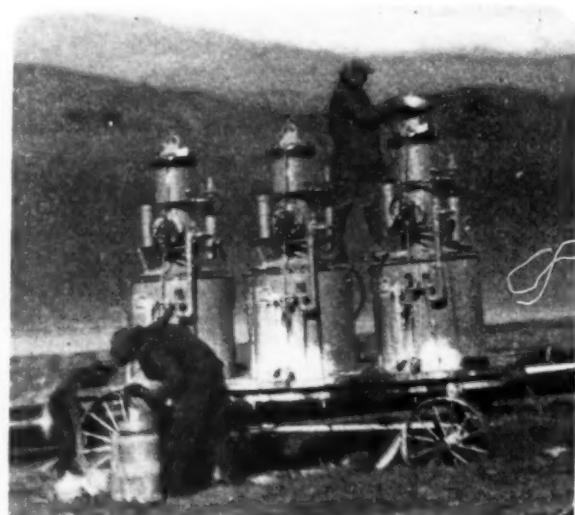
In the Edmonton region frost is usually in the ground by the first week of November at too great a depth to permit the laying of pipe. To avoid delay and to obtain sufficient material in the face of overloaded conditions at steel mills, pipe for this project was obtained not only from the United States but from Canadian and Scotch sources as well. In the latter case shipping delays at the Panama Canal threatened disruption of the working schedule. The resulting necessity for chartering a special train from Vancouver to Edmonton is typical of the unusual expedients which were required to complete this line. In 88 working days after the arrival of the first carload of pipe, gas was turned on in Edmonton and a \$3,000,000 project completed in record time.

## Floods Fail to Delay Completion of Louisiana Line

**A**DVANTAGES TO BE gained from the use of natural gas as a fuel in the Baton Rouge refinery of the Standard Oil Company of Louisiana led, on October 9, 1925, to the signing of a contract contemplating construction of a gas transmission line from the Monroe gas field to Baton Rouge. Orders to proceed with this construction were given February 1, 1926. This line, 170 miles in length, was constructed of 22-inch Dresser coupled pipe. One compressor station of 7700 horsepower rating was constructed to provide a daily capacity of 140,000,000 cubic feet at an operating pressure of 350 pounds per square inch.

Construction of this line included a pipe line crossing of the Mississippi River which was accomplished with eight multiple lines. Flood conditions not only near the river but through swamp and bayou territory presented added difficulties to construction. In fact, four of the Mississippi River lines were laid with the river at 31 feet flood stage. In spite of difficulties, however, the line was completed and gas was turned on at the refinery January 2, 1927.

On April 14, 1927, a contract was signed with the Southern Gas & Fuel Company for the extension of approximately 85 miles which is constructed of



Charging an Acetylene Generator With Carbide

A Linde Air Products Co. outfit used in constructing a 250-mile line to the San Francisco Bay area for the Pacific Gas & Electric Co.

called for installation of a natural gas system to serve the city of Edmonton and the towns of Tofield, Ryley, Holden, Bruce and Viking in Alberta. The plan provided for gathering lines, main transmission line, regulating stations and a distributing system. Detailed plans were prepared, materials ordered, construction organization created and the laying of pipe started August 6, 1923. The system included 18 miles of gathering line of 4 and 6-inch screw pipe, 77 miles of trans-

## Refueling Welders Along Right of Way

Getting supplies to construction forces on long pipe lines is a serious problem, and the average haul often exceeds 50 miles. A truck with gasoline and lubricating oil alongside a Lincoln Electric Co. outfit operated by Smith Bros., Dallas.



18-inch pipe and with one 6000 horsepower compressing station has a daily capacity of 60,000,000 cubic feet.

Completion of the line from the Monroe gas field via Baton Rouge to New Orleans marked the first step in the pipe line construction work of Ford, Bacon & Davis in the South and Southwest. This activity still continues and has resulted in the four-year interval, in the expenditure, under their direction, of more than \$90,000,000 for pipe line projects.

**Welding Employed on 66-Mile Line to Camden, Ark.**

THE NEXT LINE CONSTRUCTED was of 12½-inch and 14-inch pipe extending some 66 miles from a point near Haile, La., in the Monroe gas field to the city limits of Camden, Ark. This line varied from those previously described in using Dresser couplings and welds at alternate joints. It was one of the early important natural gas transmission lines to utilize welding. Contract for this work was dated September 23, 1927.

**Build Line from Texas Fields to Denver, Col., in 193 Days**

ONLY A FEW MONTHS later an agreement was reached for construction of what was at the time the longest and largest high pressure natural gas transmission line. This line constructed in two sections, respectively, for the Canadian River Gas Company and the Colorado Interstate Gas Company extends from a point in the Amarillo gas field approximately 33 miles north of Amarillo, Texas, to the city limits of Denver, Col. In addition to supplying all gas demands of the city of Denver, it furnishes fuel for the Colorado Fuel & Iron Company at Minnequa, to the city of Pueblo and to numerous smaller towns along or near the right of way. Although since extended, this project as originally completed included some 22 miles of field gathering lines, 325 miles of 22-inch main line, 105 miles of 20-inch main line and approximately 20 miles of branch lines of various sizes up to and including 16-inch. The line with two compressor stations with a total of 6000 horsepower has a daily capacity in excess of 80,000,000 cubic feet operating at a pressure of 350 pounds per square inch.

There were many unusual features connected with this construction, including an average rate of progress of almost two miles a day for the 193 calendar days required for completion. In this time approximately 82,000 tons

**Compressed Air**

**Drill Cutting**

**Through Rock**

**Scene near Birmingham on Southern Natural Gas Corp. project. Power tools in wide variety have been introduced to speed up construction operations with a resulting reduction in costs and a substantial saving in time.**



of pipe amounting to about 2000 carloads were laid in trenches, scores of miles of which were in solid rock. Also, 139 carloads of couplings were used and 19 carloads of bolts. Provision had to be made for distribution of all this material from some 25 unloading points and, on account of the rugged nature of the country, in some cases truck hauls in excess of 40 miles were required.

Work on this line commenced December 13, 1927, and was completed with the delivery of gas to Denver on June 23, 1928. It draws gas from the Amarillo

point near Fowler, La., to Memphis, Tenn., started about September 1, 1928. The main line is about 210 miles in length and there are two miles of river crossing at the Mississippi River. With the exception of two of the lines across the Mississippi, all pipe was laid by December 8, 1928. Their own record of nearly two miles a day established on the Amarillo-Denver project was increased to approximately 2.4 miles per day on this, the next piece of pipe line construction work undertaken by Ford, Bacon & Davis. The pipe for this line is 18-inch, lapwelded steel. Dresser couplings are used. Two compressing stations totaling 6875 horsepower are used on this line, operating at a pressure of 350 pounds. The estimated daily capacity is 60,000,000 cubic feet.

**Eight Major River Crossings on Line to St. Louis**

CONSTRUCTION STARTED early in May, 1929, on a line for the Mississippi River Fuel Corporation to provide gas from the Monroe and Richland Gas fields to St. Louis, Mo. This line, with 6 compressing stations having 36,000 total installed horsepower has an estimated daily capacity of 100,000,000 cubic feet operating at a pressure of 400 pounds. About 26.3 miles of 16-inch field lines furnish gas to 431.4 miles of 22-inch main line. In the main line, approximately 306 miles of electrically welded pipe is used, the rest being lapwelded. This line was completed and tested on November 17, 1928. The average rate of construction of 2.4 miles a day established in the case

of the Memphis line was maintained in supplying natural gas to St. Louis in spite of the fact that in the latter case there were 8 major river crossings.

**Wide Variety of Problems Solved**

FORD, BACON & DAVIS, INC., has now practically completed construction of the first portion of what is undoubt-

**Perplexing Engineering Problems in Natural Gas Line Construction**

**One pipe line included—**

**Eight multiple lines across the Mississippi River  
Four lines laid with the river at 31-foot flood stage**

**Another line necessitated—**

**Building 17 major river crossings  
Building through solid rock for many miles  
Constructing long sections through delta country subject to periodic floods**

**A third line called for—**

**Building six compressing stations totaling 36,000 horsepower  
26.3 miles of 16-inch field gathering lines  
431.4 miles of 22-inch main line  
2.4 miles of pipe line were built daily to insure completion of the line on scheduled time**

gas field in Texas where the owners of the line control between 350,000 and 375,000 acres, believed to be the largest area of gas properties held as a single substantially continuous unit.

**Lay 2.4 Mile Daily in Building Line to Memphis**

CONSTRUCTION of a line from a

edly the largest single pipe line system yet constructed. This system, constructed for the Southern Natural Gas Corporation of Birmingham, will ultimately furnish natural gas from the Monroe and Richland gas fields in northeastern Louisiana to Birmingham, Ala., Atlanta, Ga., and many other communities including, in Mississippi: Yazoo City, Durant, Kosciusko, Louisville, Meridian, Starkville, West Point, Columbus and Macon.

In Alabama, the communities ultimately to be served include, in addition to Birmingham: Tuscaloosa, Selma, Montgomery, Bessemer, Pelham, Keystone, Siluria, Landmark, Saginaw, Vernon, Calera, Newalla, Cordova, Sayreton.

Lewisburg, Coaldale, Sibleyville, Graystone, Alton, Lovick, Pell City, Riverton, Ragland and Gadsden.

In Georgia, the communities to be served, in addition to Atlanta, are: Rockmart, Aragon, Portland, Cartersville, Lindale, Rome, Plainville, Adairsville, Calhoun, Marietta and Macon.

The main line consists of 31 miles of 18-inch pipe from Alto, La., to a point near Pioneer, La.; 32 miles of 20-inch pipe from Perryville, La., to a junction with a line from Alto, then approximately 250 miles of 22-inch pipe to Birmingham, and approximately 135 miles of 20-inch pipe from Birmingham to Atlanta. Construction of this line was started in May, 1929. One compressor

station of 5000 horsepower at Reform, Ala., is expected to provide a daily capacity of 75,000,000 cubic feet at an operating pressure of 350 pounds.

Construction of this line presented a wide variety of difficulties. In addition to crossing 17 major rivers of which the most important are the Mississippi, the Yazoo, the Big Black, the Warrior and the Coosa, long sections of the line traverse the Mississippi and Yazoo River delta countries and are subject to periodic floods. There is also sharply rolling country in north central Mississippi and, in the hills of Alabama, rock formations present serious difficulty. Pipe used on this line is plain end steel, either lap or electric welded and in sections either 20 or 40 feet in length.

### \$75,000,000 FOR TENNESSEE RIVER CHANNEL

**United States Engineer Reports on Survey of 9-Foot Channel to Knoxville—Alternate Plan Would Involve Dams for Locks and Power Purposes**

Knoxville, Tenn.—In an exhaustive report submitted to Congress by Major General Brown, chief of United States Army Engineers, the possibilities of the development of the Tennessee River in North Carolina, Tennessee, Alabama and Kentucky are set forth with a recommendation that a 9-foot navigation channel be provided from the mouth of the river to Knoxville, a distance of approximately 650 miles. This depth would be maintained by a series of low dams equipped with locks, according to the report, and would involve a cost of \$75,000,000 if undertaken entirely by the government. An alternative plan is approved, however, which would permit private companies, states or municipalities to build higher power dams in place of any two or more low ones, in which case the government would only be required to pay the cost of locks and other construction strictly for navigation purposes, not to exceed \$30,000,000.

For the ultimate utilization of the Tennessee River basin, engineers figure a cost of \$1,200,000 on development yielding 149 hydro-electric power units, with some auxiliary steam plants producing for the interconnected system about 3,000,000 kilowatts. A 9-foot navigation channel would be provided by this plan, both on the Tennessee river and its principal tributaries, but it is explained that the government would

not undertake such a development. Based on 1926 rail movements, it is estimated that 5,700,000 tons of freight are available for the river, at a saving in freight rates of \$7,300,000, and with the normal growth of the territory, the available freight would increase to 17,800,000 tons by 1950, resulting in a saving of \$22,800,000.

The project would require dams at Coulter Shoals, White Creek, Chickamauga, Guntersville, Pickwick and Aurora Landing, supplementing storage provided by the Hales Bar dam, three Muscle Shoals dams and dam No. 52 on the Ohio River. Without regard to existing dams, the recommended structures would cost for full navigation and power purposes a total of \$248,925,706. It is estimated, while \$15,500,000 would be required to complete existing projects.

### Complete Egg Case Mill

Opelousas, La.—The Thistlewaite Lumber Company recently completed an egg case mill. The plant was moved to this city from Washington, La., about five years ago and has steadily expanded. It now produces mouldings, finished lumber, shingles and lath, and with the completion of the mill for making crates it becomes one of this section's largest industries covering 18-acres and employing 130 persons.

### Missouri Sells \$10,000,000 Road Bonds

Jefferson City, Mo.—Road bonds in the amount of \$10,000,000, to bear an interest rate of 4 1/4 per cent, have been sold by the State of Missouri, L. D. Thompson, state auditor, to a syndicate headed by the Harris Trust and Savings Bank, Chicago, Ill. The purchase price was \$10,057,377.

### \$3,000,000 STEAM POWER STATION

**Virginia Public Service Company Plans Big Plant on James River**

Bremo Bluff, Va.—Construction of the new steam generating station to be erected here by the Virginia Public Service Company, Charlottesville, will be started at once, according to A. W. Higgins, president. The station will have an initial installed capacity of 40,000 horsepower, later to be increased to 134,000 horsepower and ultimately to 267,000 horsepower. It will be the base load plant of the entire interconnected system of the company and is expected to be completed about the first of next year. The estimated cost of the project is in excess of \$3,000,000.

A double circuit 66,000-volt transmission line will be built from the plant to Charlottesville, a distance of about 30 miles, to provide the tie with the system, while distribution lines will radiate from the plant to various points in the adjacent territory for serving electricity to farms, homes and industries in the district. The initial plant installation will consist of two 15,000-kilowatt turbo-generators operated at 450 pounds pressure at an initial temperature of 750 degrees Fahrenheit, with provision for future operation at higher temperatures. An outstanding feature of the station will be its arrangement for centralized control, so that one person may operate both the electrical and mechanical ends, including the boiler room.

Boilers will be of the single pass vertical type with pulverized coal furnaces, the installation to consist of three burners and pulverizers per boiler. Two boilers will be installed initially and

space reserved for the third one. They will be equipped with new type air heaters and with combustion control, the latter to be operated from a control board. Coal will be handled by conveying machinery to a multiple burner directly over pulverizers of the ball type running under vacuum to assure operation free from dust. Water will be brought to the plant from the James River by a canal under the tracks of the Chesapeake and Ohio Railway. About 28,000 gallons per turbine per minute will be drawn for condensing purposes and then returned to the river. Storage for 25,000 tons of coal will also be provided.

Allen J. Saville, Inc., Richmond, Va., has contract for excavation and the L. E. Myers Company, New York, contract to erect the plant.

### \$6,000,000 Bonds to Complete Seawall

New Orleans, La.—Plans of the Orleans Levee Board for the issuance of \$6,000,000 bonds to complete an adequate seawall along the Pontchartrain lakefront development have been approved by the Lake Pontchartrain Advisory Commission. The Board's plan provides for the issuance of \$1,000,000 of bonds to be applied to the cost of the seawall and for the issuance of \$1,200,000 within six months to complete it, while the remaining \$3,800,000 would be deposited in trust in a New Orleans bank and not sold until the completion of the seawall in zones 1 and 2 of the project and until the seawall is progressing in zones 3 and 4. In its report approving the plans, recommendations of Bartholomew and Associates, city planners of this city, are outlined, suggesting the immediate completion of an adequate seawall to retain the fill now in place and that the first unit of the project to be developed shall be zone 2.

### Government's \$6,000,000 Loan Fund Available to Farmers

Loans to farmers in storm, flood, and drought-stricken areas of the United States, for seed, feed for work stock, and fertilizer for 1930 crops will be made by the Department of Agriculture under authority of a resolution passed by Congress and approved March 3, a fund of \$6,000,000 having been provided in the Deficiency Act approved March 26.

In the South applications for loans from Virginia, North Carolina, South Carolina, Georgia, Alabama, and Florida will be received at the Farmers' Seed Loan Office, Columbia, S. C.; and those from Missouri and Oklahoma will be handled at the Old Custom House, St. Louis, Mo.

## Industrial and Building Expansion in the South

Industrial, building and general developmental activities in the South and Southwest in the first quarter of 1930 are represented by a total of 14,985 items as published in the DAILY CONSTRUCTION BULLETIN and in the construction news columns of the MANUFACTURERS RECORD. During the corresponding period of the preceding year 17,423 items were published.

The notices published this year include 7099 industrial development items, 3998 items covering building projects and 1133 financial notices. The summary herewith, giving the total items covering various classes of work for the first three months of 1930, indicates the extent of these activities and the expansion under way in the 16 Southern states in many varied lines of endeavor.

Over 2155 items on road and street

projects were included. Bridge, culvert and viaduct notices numbered 913. Thus, up to April 1 a total of 3068 items appeared on these two closely allied classes of construction. Dwelling construction is represented by 932 separate items, covering only those individual projects involving the expenditure of \$10,000 each and up. A wide variety of miscellaneous enterprises is represented by the publication in the three months' period of 728 notices.

School building construction is represented by 855 items, hotel and apartment construction by 295, store building by 358, construction of churches by 287, and bank and office building projects by 166 items. Land development projects were covered in 281 separate announcements, and garages, filling stations and similar projects by 384 items.

#### INDUSTRIAL DEVELOPMENTS

	Jan.	Feb.	March	Jan.-Mar.
Airplane Plants, Stations, etc.	59	44	47	150
Bridges, Culverts, Viaducts	377	262	274	913
Canning Plants	23	17	13	53
Clayworking Plants	3	7	5	15
Coal Mines and Coke Ovens	13	11	3	27
Concrete and Cement Plants	1	3	3	7
Cotton Compresses and Gins	10	12	19	41
Cottonseed Oil	4	3	1	8
Drainage, Dredging and Irrigation	42	24	23	89
Electric Light and Power	120	65	74	250
Fertilizer Plants	2	5	0	7
Flour, Feed and Meal Mills	5	5	1	11
Foundry and Machine Plants	32	20	33	85
Gas and Oil Developments	136	112	105	353
Ice and Cold Storage	48	28	25	101
Iron and Steel Plants	10	8	8	26
Land Developments	112	79	90	281
Lumber Enterprises	34	44	29	107
Metal Working Plants	2	2	2	6
Mining	20	11	13	44
Miscellaneous Construction	61	58	55	174
Miscellaneous Enterprises	303	204	221	728
Motor Bus Lines and Terminals	27	23	25	75
Garages, Filling Stations	155	107	122	384
Railway and Street Railways	62	27	40	129
Railway Shops and Terminals	7	3	14	24
Road and Street Construction	712	631	812	2,155
Sewer Construction	105	87	92	284
Shipbuilding Plants	0	0	0	0
Telephone Systems	63	27	41	131
Textile Mills	38	46	34	118
Water Works	98	87	75	260
Woodworking Plants	27	15	12	54
	2,711	2,077	2,311	7,099

#### BUILDING

Association and Fraternal	32	18	34	84
Bank and Office	52	61	53	166
Churches	116	77	94	287
City and County	113	90	69	272
Dwellings	310	261	361	932
Government and State	60	62	54	176
Hospitals, Sanitariums, etc.	75	60	60	195
Hotels	84	99	112	295
Miscellaneous	59	40	53	152
Railway Stations, Sheds, etc.	15	16	22	53
Schools	288	292	275	855
Stores	147	92	119	358
Theatres	22	19	24	65
Warehouses	44	31	33	108
	1,417	1,218	1,363	3,998

#### FINANCIAL

Bond Issues Proposed	233	226	239	698
Bond Issues Sold	57	67	58	182
Building and Loan Associations	9	3	0	12
New Financial Corporations	112	61	68	241
	411	357	365	1,133
WANT SECTION	696	761	769	2,226
TOTAL	5,235	4,413	4,808	14,456
* FIRE DAMAGE	265	134	130	529
	5,500	4,547	4,938	14,985

# How the Bureau of the Census Will Tabulate the Records of 120-Odd Million Americans Sent in by Enumerators

By RICHARD Woods EDMONDS.



W. M. Steuart  
*Director of the  
Census.*

holes. The sheets on which the enumerators are now writing down the names, ages, occupations and other data are then filed away, under lock in a fireproof vault, for 60 years, while the cards go through the machines of classification and enumeration.

The written records, the law provides, must be kept in secret for 60 years, after which time they are open to historical researchers and genealogists for at the rate of less than 26,000 per day. The machine used this year will punch 175,000 cards in a day.

The cards—one for every man, woman and child in the United States—are the records used in the Bureau for compilation of all the statistics published by it. Therefore, let us turn our attention to the cards, and see how they are made and how used.

The first operation is the transfer of the information from the written records to a blank card. The girl at the machine in the illustration reads off the data recorded on a single line, punching it by use of keys in a key-board, according to the code devised to cover all desired classifications. Skipping the first four columns on the left, she starts with the column numbered 5, as shown in the accompanying illustration.

A punch hole at the "no" or "yes" indicates whether the individual lives on a farm. Next, a punch at M or F indicates whether male or female. In the seventh column a punch hole shows race, W being for white, neg for negro, etc. In this fashion she goes clear across; then removes that card and starts on another. The machine on which she works was developed by a private company for commercial use,

**W**HEN the records being compiled by the census enumerators are all sent in to Washington, the first but has been modified by the Bureau for its own purposes. In the 1920 Census one of these machines was capable of punching 700 cards per day; but improvements made since then enable the machines now in use to punch 2500 cards per day.

but has been modified by the Bureau for its own purposes. In the 1920 Census one of these machines was capable of punching 700 cards per day; but improvements made since then enable the machines now in use to punch 2500 cards per day.

From this machine the cards go to what is called an automatic gang punch. This little machine punches the first four columns on the left hand end of the card, which were omitted by the nimble-fingered operator who recorded the other data. Since these columns register the state, county, city and ward in which the person lives, all cards for any given ward will be punched the same. Accordingly, a gang punch is set for a given state, county, city and ward, and all cards for that district are run through it. Ten years ago the hand power press punched 6 cards at a stroke at the rate of less than 26,000 per day.

The steps so far have been concerned with the making of 120-odd million nameless cards. From this point on, all operations are concerned with classification and enumeration of these cards. From the gang punches, therefore, the cards go through the third machine, which sorts them according to any classification that may be desired. One after another the cards are hustled

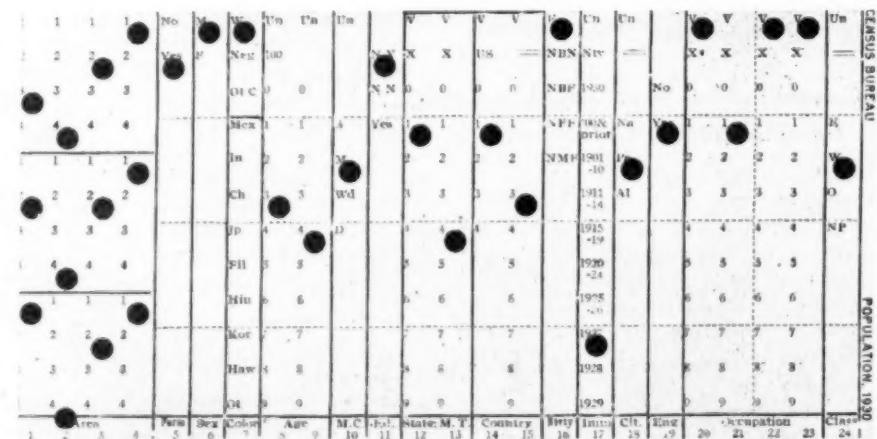
under delicate fingers which find the punch holes and operate the classifying mechanism.

The cards may be separated first for sex. Then, on another run, those for the men may be separated into racial groups, and then those for the women likewise separated.

When the cards first come from the punching to the sorting room, they are arranged in the order in which the census-taker put the names down on the schedules. All the cards for the same city or ward will be together, but men and women, blacks and whites, citizens and aliens, young and old, will be all intermingled according to the way they happen to live in the particular section that was being canvassed by the enumerator. The main use of the sorting machine is to separate the cards according to sex, color, and place of birth.

All the cards for the entire nation are run through the sorting machines three times to separate them according to sex, race, and nativity. Afterwards, special sortings according to age, occupation, citizenship, or other items of information may be made for certain classes of the population, or if desired, for the country as a whole. Each time an additional item of information is to be sorted, the cards have to be run through the machine.

The model that will be used in the



Above is Photograph of an Individual as Recorded at the Census Bureau.

The card shows that on April 1, 1930, the person was living on a farm in a rural section of Kittson County, Minn.; that he was a male, white, 34 years of age, married, literate, born in Germany, with Polish as his mother tongue, emigrated to the United States in 1927, has taken out his first papers, speaks English, is a farm laborer, and is a wage earner.

present census was developed in 1928. It represents an increased output of about 30 per cent over the 1920 model, and is at the same time much more efficient than the old machine. About 70 of these machines will be required to sort the cards for the 1930 census.

Finally, the sorted cards must be tabulated. This is the operation toward which all the others have been working. A combined adding and tabulating machine, by far the most delicate and complicated mechanism used in all census work, has been perfected to a point at which it can count and register 59 combinations of facts each time the cards are handled. The sorting process merely groups the cards in general classifications as an aid to the tabulating machine. This machine handles cards at the rate of 400 per minute. Delicate electrical fingers trail across the flying cards, make contacts with points through the punch holes, and actuate the recording mechanism.

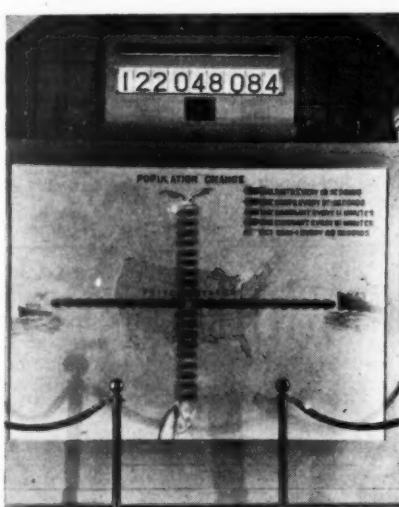
Given a stack of cards for males, say, it will record the number or any given age in each race, how many of these

were born in the United States, how many could speak English, how many could read and write, and a dozen other

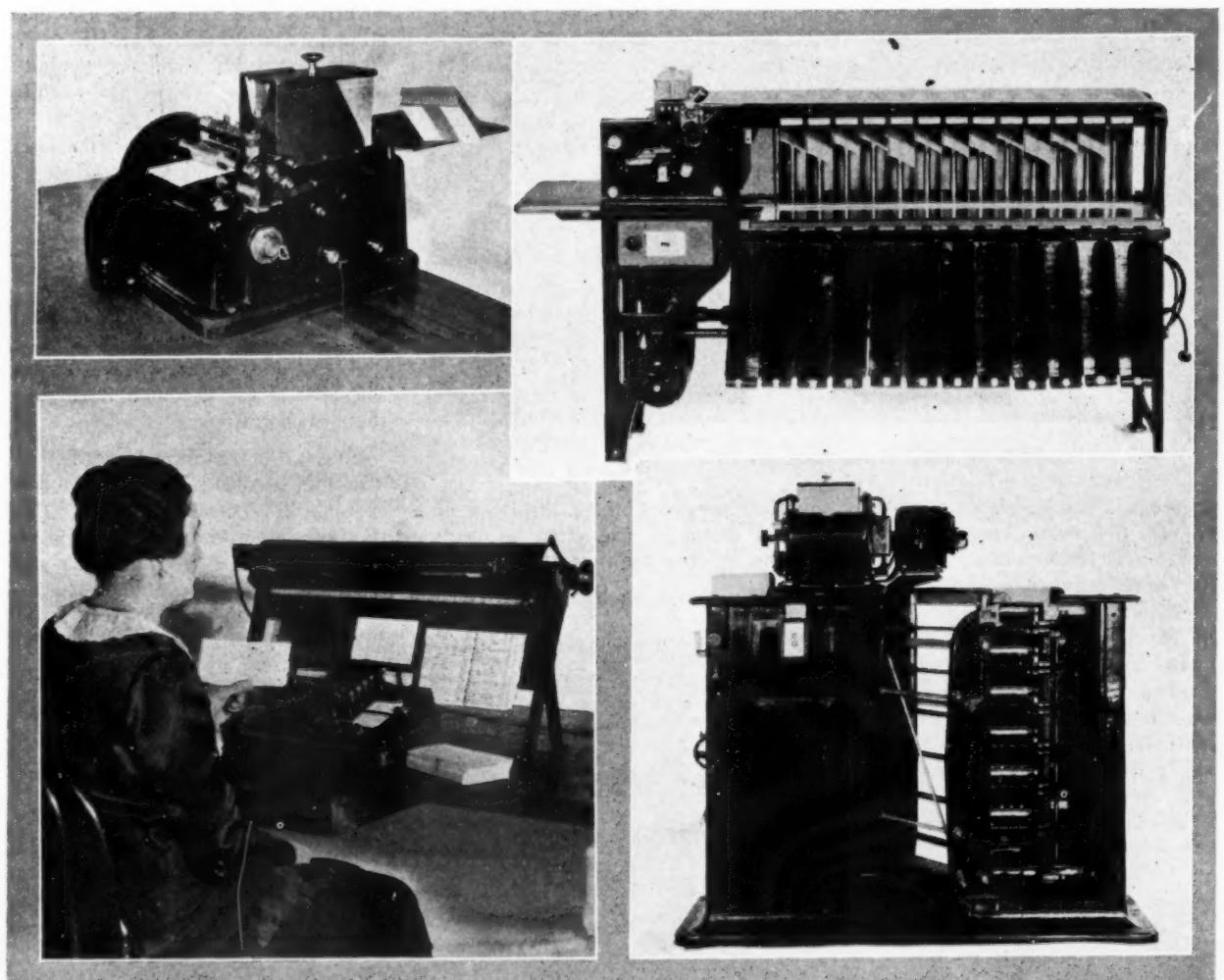
facts. Furthermore, it will reject those cards on which impossible or improbable combinations have been recorded through error. Thus, if a male were listed as six years old and head of a family, or if a man were listed as native born and having taken out naturalization papers, those cards would be thrown to one side, to be sent back and compared with the original record.

This is the first machine in the process to make a record of its operations. It prints its count on a sheet of paper, and the sheets it prints furnish the figures for the elaborate statistical tables of the Bureau. All previous operations have merely lead up to this.

The Census Bureau estimates that after taking into account births and deaths, immigration and emigration, we make a net gain in population of 1 soul every 23 seconds. A machine has been set up to record these estimated additions to our population, and when I walked into the office of the Bureau at about 10 o'clock Thursday morning, April 3, it recorded a population of 122,187,589. During the few minutes that I waited to see Mr. Steuart, Director of



This Chart Shows There Is One Birth Every 13 Seconds; One Death Every 23 Seconds; One Immigrant Every 1½ Minutes; One Emigrant Every 5½ Minutes. Net Gain, One Every 23 Seconds.



Upper Left—Automatic Gang Punching Machine. Upper Right—Automatic Sorting Machine. Lower Left—The Operator is Seated Before the Machine on Which Individual Record Cards Are Punched. Lower Right—Figures Come From This Machine and All Previous Steps Build Up to This.

the Census. I watched our population mount, and when I returned to the room at about 12:10 after a trip through the department, the figure had added nearly 350 to the number of our people. Officials of the department are very much interested in the check that the present enumeration will furnish upon the accuracy of the machine's speed.

Some of the machinery used by the Census Bureau is used also in many

large industries for cost accounting and other statistical work, but much of it is not used elsewhere and has been developed entirely for use of the Bureau. The inventor, Mr. Le Boitie, has been with the Bureau for many years, and has turned out some machines of wonderful dexterity, speed and accuracy. Mr. Le Boitie's machines do not stand idle between the decennial population censuses, but work year in and year out on

the industrial and agricultural censuses taken at frequent intervals.

### \$3,000,000 Buildings for St. Louis

St. Louis, Mo.—Interests represented by Henry R. Weisels Company, Inc., are having plans prepared by Preston J. Bradshaw, local architect, for two 20-story buildings, each structure to cost \$1,500,000.

## Better Working Conditions Mean Better Work

### Model Home for a Life Insurance Company in North Carolina

[Many examples come to the MANUFACTURERS RECORD of the application of advanced scientific knowledge to health-giving design and arrangement of office and factory working conditions in the South, of which this article is an illustration. It is common experience, where careful health and production records have been kept, that working conditions designed to promote the health of employes result in lowered labor costs through increased efficiency.—Editor MANUFACTURERS RECORD.]

That the results of better working conditions for employes will readily appear, both in the health of the employes and in volume and quality of work per-

out the plant; windows glazed with a type of glass admitting health-giving rays of the sun; organized sports activities, and advantages of a cafeteria serv-

After-hour sports activities are encouraged, with company officials participating heartily. The company grounds, embracing 132 acres, have been equipped with ball field, tennis courts, croquet grounds, and putting greens with nearly all the equipment furnished by the company. Working hours are established from 8:30 A. M. to 4:05 P. M., with thirty-five minutes off for luncheon. In summer the closing hour is placed at 3:45.

An interesting feature is the big cafeteria where meals are served at cost. Here the honor system is in use. The staff members select the foods desired and mark off on a priced menu, which they sign and file, the items consumed. These slips are deducted monthly from the pay checks.

Pilot Life, organized in 1903, has now over \$100,000,000 insurance in force, and operates in all Southern states. In addition to the ordinary life insurance department, it operates an industrial department, and an accident department.



A Glimpse of the Spacious Offices

formed, seems to be proved by the experience of the Pilot Life Insurance Company, which has now completed more than a year's occupancy of its model home in the suburbs of Greensboro, N. C.

From the health standpoint, the visitor learns from Dr. H. Frank Starr, medical director, that a check-up shows a marked improvement over the record for the preceding year, when the old building in Greensboro was housing the company. With a combined staff numbering upwards of 170 persons, there was a loss of time of 5.49 days as an average for the staff. The men lost an average of only 2.72 days and the women 6.26. Average for the previous year was 7.5. When it is realized that an influenza epidemic was encountered in 1929, the unusual feature of this gain is apparent.

Use of artificial ventilation through-

ing food prepared under direction of a trained dietician, are cited as leading reasons for the improved health condition.



Model Cafeteria Conducted by Pilot Life Insurance Co. for Its Employes

# Alumina Cement Situation Under the Atlas-Eckel-Lafarge Agreements

By EDWIN C. ECKEL, Washington.

Late in April, 1929, the Patent Office Gazette announced that under the provisions of an act passed very unobtrusively in 1928, application had been made for a six-year extension of two patents which normally expired on June 18, 1929. The two patents in question were Nos. 1,029,953 and 1,029,954, both granted in 1912 to Spackman and Lazell; and both since 1923 the property of the Atlas Lumnite Cement Co. Neither of them had ever been adjudicated, and the value of certain broad product claims was of course problematical. In any case, it was under the shelter of these two patents that the American alumina cement industry had grown up, not very rapidly, since 1923.

Since the Act of 1928 contained a clause specifically designed to protect other patentholders in case any extensions were granted under it, and since certain of the allegations in the application for extension were subject to argument, an opposition was immediately filed by Edwin C. Eckel, as owner of five American patents covering improved processes for alumina cement manufacture. A little later a second opposition was filed by the Lafarge company, of France, on other grounds. These oppositions prevented the extensions being granted, and after the Atlas company became in 1930 a subsidiary of the United States Steel Corporation, it became possible to negotiate successfully. As a result both oppositions are withdrawn, in consequence of agreements executed late in March between Eckel and Atlas, and Lafarge and Atlas, separately.

The legal and trade effects of these settlements may be summarized as follows:

(1) The Atlas Company is now free to secure the extensions, until 1935, of the two patents.

(2) The Atlas Company retains the exclusive right to manufacture alumina cement by the rotary kiln process in the United States. Or, for that matter, by any other process so long as it does not infringe on any one of the Eckel patents, to whose use it secures no rights whatever.

(3) Eckel has the exclusive right to manufacture alumina cement in the United States by any process or apparatus covered by his own patents. Licensees under these five Eckel patents are specifically released by the Atlas company, from any possible claim based on any alleged infringement of the two

Spackman patents. No payment, present or future, is made by Eckel or his licensees to Atlas Lumnite, the release being granted purely as an equivalent for Eckel's consent to withdrawal of his opposition.

(4) The extension of the two Spackman patents will serve to bar foreign companies from shipping alumina cement into the United States, except in so far as Lafarge may ship in under the Atlas-Lafarge agreement.

(5) Under this general pair of agreements there are therefore from now on two possibilities for making alumina cement in the United States. One is the manufacture of alumina cement *alone* by Atlas or its licensees under the rotary kiln process. The other is the manufacture of alumina cement and iron or a ferro-alloy, in the blast furnace, cupola, electric furnace, open-hearth or any other possible apparatus which will yield those two products when properly charged. Both Eckel and Atlas are equally protected, from now on, by the product claims of the two extended Spackman patents, from any other competition, foreign or domestic.

So far as raw materials are concerned, it has been established by actual furnace operation in both America and Europe that the iron ores used in the Eckel processes may carry as high as several *per cent* of sulphur without injuring either the iron or the cement. As for the bauxite used, the higher its iron content the better. Except when the intention is to make ferro-silicon or a high silicon pig iron, the silica content of both the iron ore and the bauxite will still have to be carefully limited. But the net effect of all this is to greatly broaden the field within which suitable raw materials for alumina cement manufacture may be selected, and to make for greater certainty in the quality of the product, as well as to sharply lower costs of manufacture. It is time that such improvements arrive, for the recent shipment of European alumina cement to supply Navy Dept. requirements in the yard works at Halifax is an episode which does not exactly reflect credit on the enterprise of either Canadian or United States cement manufacturers. But it will be repeated steadily unless good domestic cement is supplied at lower costs.

The growth of the alumina cement industry abroad, both in Europe and Asia, has been hitherto far more rapid than in the United States. It is hoped that the adoption of the more economic processes now available here will permit an equally rapid growth of the industry. With the fear of patent litigation re-

moved, such adoption would seem to be a reasonable enterprise for either existing cement-makers or existing iron-makers.

## New Food Products Plant Established in Atlanta

The Maury-Cole Co., manufacturers of Canova brand food products, recently opened a \$250,000 plant in Atlanta. The building is 75 by 148 feet, three stories high, brick and mill construction and sprinkler equipped. The new plant employs about 120 persons, and 35 salesmen are operating in the states of Georgia, Florida, North and South Carolina and eastern Tennessee. The Atlanta plant is one of four in the South, others being located in Memphis, Dallas and Louisville. In addition to coffee the company produces tea, peanut butter, mayonnaise products, condiments, spices and extracts.

Machinery was supplied by the following firms:

**COFFEE:** Roasting, Jabez Burns & Son, New York City; grinding, Allis Chalmers Mfg. Co., Milwaukee, Wis.; packing, American Can Co., Chicago, Ill.

**SPICE:** Grinding, Allis-Chalmers Manufacturing Co.; packing, American Can Co., Chicago, Ill., and Stokes & Smith, Philadelphia, Pa.

**PEANUT:** Roasting, Jabez Burns & Son, New York City; packing, Anchor Cap & Closure Co., Long Island City, N. Y., and Economic Machine Co., Worcester, Mass.

**EXTRACT:** International Filler Corp., Petersburg, Va.

**MUSTARD:** Grinding, Allis Chalmers Co., Aller, The Filler Machine Co., Philadelphia, Pa.; laboratory, Economic Machine Co., Worcester, Mass.

## Will Build Three New Ships

New Orleans, La.—Following the announcement that the United Fruit Company had been awarded three mail contracts, one of which calls for the transportation of mail from New Orleans to Puerto Colombia, Crawford H. Ellis, vice-president of the company here, disclosed plans of the company for building three new 6000-ton liners of 18-knot speed capacity for weekly service between New Orleans and Puerto Colombia.

## Sells \$1,000,000 Revenue Notes

Memphis, Tenn.—Revenue notes in the amount of \$1,000,000 have been sold by the City of Memphis to the First National Old Colony Corporation and F. S. Moseley & Co., New York, on a joint bid of par and premium of \$170.

## VALUABLE PRODUCTS FROM NATURAL GAS

Possibilities of New Developments Would Benefit South With Its Enormous Gas Resources

Treatment of natural gas by pyrolysis, or decomposition at high temperatures, for the purpose of obtaining various commercial products, has recently received considerable attention, not only in this country, but among European nations as well. A study of the matter is being made by the United States Bureau of Mines and the State of Oklahoma at the Petroleum Experiment Station, Bartlesville, Okla.

When methane is subjected to temperatures of 1800 to 2200 degrees Fahrenheit it breaks up or "cracks." At slightly lower temperatures the parts reunite, but form new products as they combine. The higher hydrocarbon gases also break up and reunite to give various products different from the parent substances. At sufficiently high temperatures the gases will decompose to carbon and hydrogen. In either type of cracking, hydrogen is always set free and by suitable means can be isolated and used commercially. Its major uses are as a reducing agent in the process industries, the hydrogenation of mineral and vegetable oils and coal; the synthetic production of ammonia and fertilizers; and as a refrigerant.

Other gases formed in the pyrolysis of natural gas are acetylene, butadiene, ethylene, propylene and butylene. Acetylene is used in welding and cutting metal; and may be used to prepare acetaldehyde, which is further used in silvering mirrors or in the preparation of medicinals such as chloral, a soporific. Butadiene, under proper treatment, condenses to form an artificial rubber having the same general composition as natural rubber. Ethylene has recently come into use in ripening fruits. It is also finding use as an anesthetic. However, its major use at present is the synthesis of ethylene glycol, an anti-freeze for water cooled motors, and the basis for a series of important lacquer solvents. If desired, ethylene may be converted to ethyl alcohol, widely used as a solvent, also in the preparation of other compounds such as ether. Again by the proper reaction with chlorine, ethylene chloride is formed. This is a valuable solvent, especially for fats and essential oils, and is also used as an anesthetic. Propylene finds use as an anesthetic, and also in the synthesis of Iso-propyl alcohol, which is being substituted for ethyl alcohol with good results in certain instances. Butylene is also used in the preparation of certain butyl alcohols which are finding

use as solvents in the chemical industries.

Principal liquids formed in the pyrolysis of hydrocarbon gases are benzene, toluene and xylene. Benzene is a very valuable product and forms the basis of many chemical processes. Thus are obtained aniline and the entire series of aniline dyes, and many explosives, perfumes and medicinals. In addition benzene is an excellent solvent and anti-knock motor fuel. Toluene is the basis of the familiar T. N. T. (trinitrotoluol), of dyes, and of saccharin, a sugar substitute 400 times as sweet as sugar. Xylene is similarly used in the synthesis of dyes and other products, and also to a large extent as a solvent.

Solids resulting from pyrolysis are chiefly naphthalene and anthracene. Naphthalene is well known as an insecticide in the form of moth balls. It is also the basis for the important indigo dyes. Anthracene is used in the synthesis of alizarin dyestuffs. Finally, under certain conditions of cracking,

there is obtained carbon black, widely used in making ink, in compounding rubber, and as a pigment for paint.

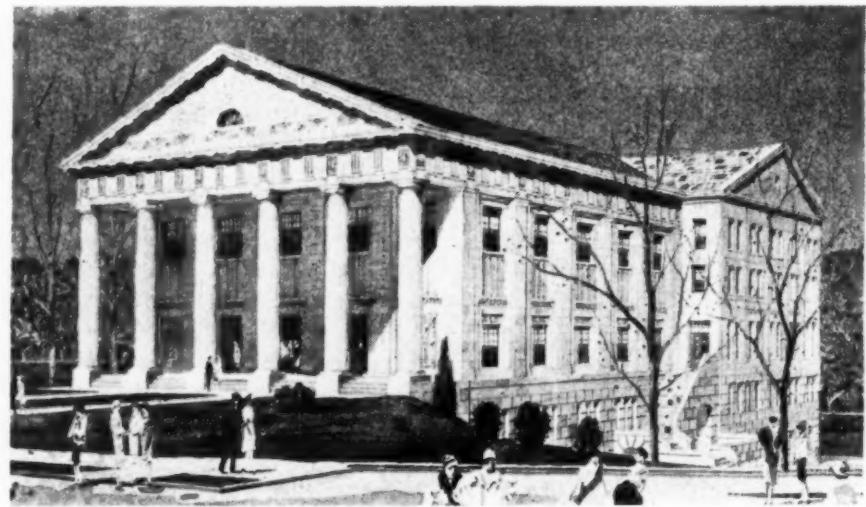
## \$550,000 Railway Pier Extension

Norfolk, Va.—The extension to pier S of the Norfolk & Western Railway Company at Lambert's Point, near this city, for which contract was recently awarded to John P. Pettyjohn & Company, Lynchburg, Va., at approximately \$550,000, will be 400 by 222 feet wide. Foundations will be of creosoted piling, with steel columns supported by steel cylinders filled with concrete, and wood floors. The shed will consist of steel columns, trusses and purlins, with outside walls covered with corrugated steel and a composition finished roof on 2-inch sheathing. It will be equipped with steel rolling doors, ramps and sprinkler system. Structural steel is being furnished by the Virginia Bridge and Iron Company, Roanoke.

## \$325,000 Church Building to Be Erected

General contract has been awarded to the Southern Ferro Concrete Company, Atlanta, Ga., to erect a new building for the Ponce de Leon Baptist Church, Dr. Luther Rice Christie, pastor. The structure will be 71 by 170 feet, of reinforced concrete and structural steel frame, with Indiana limestone or Georgia marble exterior and a slate roof. A vacuum steam heating plant will be installed and a direct and indirect lighting system employed. Seating will be provided in the auditorium for 1400, while the Sunday school department will accommodate 1650. The building will be T-shaped, with church auditorium fronting

on Peachtree road and Sunday school section forming the cross of the T in the rear. Because of the topography of the site, the church proper will be three stories and the Sunday school building five stories. The project will represent an investment of \$325,000. George Harwell Bond, Atlanta, is the architect and George M. Brown, chairman of the building committee. Other members include: Julian M. Harrison, vice-chairman; H. S. Collinsworth, secretary; Joe L. McMillin, Bolling H. Jones, F. J. Cooledge, George Mathieson, J. S. McCullough, A. J. Orme, Mrs. M. M. Emmert, Mrs. Porter King, Charles T. Nunnally, Lee Asherford, S. B. Naff and A. W. Jackson.



Ponce de Leon Baptist Church Planned for Atlanta, Ga.

## SUPREME COURT BUILDING TO BE RUSHED

### \$9,740,000 Authorized for Construction.

Washington, D. C.—A new building for the United States Supreme Court is expected to be completed within two years, according to Representative Elliott, chairman of the House Committee on Public Buildings and Grounds. The new building, to be erected across the Plaza from the Capitol, will occupy a full city block and a portion of another block, on which there are now a number of structures. The work of razing the buildings will be started within 30 days and contract for the new building will be awarded by the fall. Funds will be available as needed for construction. \$500,000 having been provided in the first deficiency bill signed by the President a few days ago, with an additional \$1,000,000 carried in another deficiency bill to be available by July 1, 1930. A total of \$9,740,000 has been authorized by Congress for the construction of the building, which will face west toward the Capitol. It will be of Corinthian design, with an east and west dimension of 385 feet and a north and south dimension of 304 feet, the central section above the east front terrace to be 4 stories and the west front 3 stories. Cass Gilbert, New York, is the architect and construction will be under the supervision of David Lynn, architect of the Capitol.

### School and Infirmary May Erect \$2,500,000 Structures

Louisville, Ky.—Plans for merging the medical and dental departments of the University of Louisville with the Norton Memorial Infirmary in a \$2,250,000 project on the Belknap Campus have been approved in principle by the trustees of the University and managers of the Infirmary, according to Dr. Raymond A. Kent, president of the former. Tentative plans for structures to house the two schools and infirmary have been drawn, it is said, but details of financing are yet to be worked out.

### Building Active in Shreveport

Shreveport, La.—Plans and specifications will soon be prepared for an additional waterworks unit and pumping station at the lower end of Gross Lake, to augment this city's water supply. Funds for the project will be provided by the issuance of \$500,000 bonds which have been authorized by the city council. A plan for securing the construction of a \$1,500,000 central railroad station is being sponsored by Harvey Fields, public service commissioner, who has the support of the Chamber of Commerce

and other civic organizations, and the Lumbermen's Club is fostering a move for a home-modernization campaign in the city. The plan has already taken definite shape, it is said, for modernizing whole blocks of property in certain sections of the city, financial aid for such work having been assured. Work on the Western Union Telegraph building is nearing completion, while construction of the Montgomery Ward building is progressing rapidly.

### Railway Office Building Addition

Galveston, Tex.—Plans are being prepared by the Engineering Department of the Gulf, Colorado and Santa Fe Railway Company, F. Merritt, chief engineer, for an addition to the company's general office building here. Tentative plans call for the erection of an 8-story building with an 11-story tower section, the unit to be connected with the present building.

## Modern Handling of Heavy Metals

### Method of Storing and Dispatching Sheet and Bar Steels in the New Ryerson Addition Described

A new heated building making available 36,000 square feet of space for storing and dispatching high grade steels, has been completed by Joseph T. Ryerson & Son, Inc., of Detroit, Mich. This addition marks the fourth large expansion program of the Ryerson company during its 12 years of growth in the Detroit area.

The new unit, 120 by 300 feet, includes five bays and a large transfer bay at one end with facilities for inside loading of freight cars. Five cranes will move material from all parts of the building to the transfer bay, where another crane loads it onto cars. This equipment, built for both large capacities and greater speed, facilitates dispatching of rush shipments.

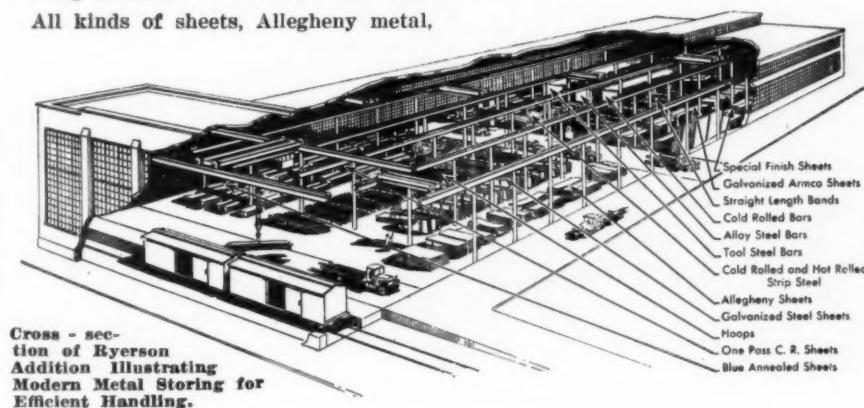
Truck loading facilities through the center of the building are provided by a driveway 20 feet wide, permitting the loading at one time of five trucks, one under each of the five cranes. Trucks are also loaded under the crane in the transfer bay. Industrial tracks, paved into the driveway in the transfer bay, permit transferring stock from this building to any part of the plant for combination loading. The floor of the building is on the same level as the railroad car floor, thereby forming a dock at the railroad tracks which simplifies moving material to and from the cars.

All kinds of sheets, Allegheny metal,

Ascoloy, hot and cold rolled strip steel, bands, and other high grade steels which require exceptional care will be stored in this 36,000 square feet of heated warehouse space. Unit heaters are installed to circulate heat and maintain an even temperature. New lines of metal working machinery and small tools have also enlarged the scope of the Ryerson machinery sales.

An open span 90 x 350 feet has been developed between the new unit and old buildings, for storing and dispatching reinforcing bars, contractors' supplies and other material not affected by weather. Twenty-six carloads of steel can now be handled at one time on the Ryerson property. Many orders for truck delivery may be filled at one time in the large center drive way. Material is rapidly transferred to all parts of the span and to trucks and railroad cars with a large overhead crane. Equipment for bending and shearing has been installed for completing orders on material in the span, without moving it to other parts of the plant for these operations.

In addition to its Detroit unit, the Ryerson company is serving eight other industrial centers, with plants at Chicago, St. Louis, Cincinnati, Cleveland, Buffalo, Philadelphia, New York and Boston.



## Miniatures of Southern Cities

*UNDER this heading the MANUFACTURERS RECORD continues publication of the series of thumb-nail sketches of Southern cities, indicating in brief their resources and presenting some of their outstanding accomplishments in 1929.*

### Albany, Georgia



By HATTIE HARDY, Albany Chamber of Commerce.

**O**UTSTANDING claims for Albany, which has 18,500 population, are that it is the largest market for Spanish peanuts in America, with three peanut shelling plants; and it is the world's pecan center, the hub of an area of 70,000 acres of trees bearing paper shell pecans.

Albany has established a record for the fewest fires in America, having won four awards in the National Inter-City Fire Waste Contest.

Six small plants, with total payrolls of \$230,800 distributed among 192 employees, were added to the city's industrial life in 1929. These manufacture ice, lumber, barrel heads and staves, and cotton mill rollers.

The outstanding undertaking of 1929 was inauguration of a full malaria control campaign, Dougherty County being the first in the United States to adopt such a campaign in cooperation with and under supervision of the Federal health authorities.

Albany is classed as a strictly American Plan Open Shop community.

### Alexandria, Louisiana



By JOHN W. LEWIS, JR., Alexandria Chamber of Commerce.

**A**CCORDING to the latest estimate obtainable, Alexandria has a population of 25,100, while the area within five miles of the geographical center of the city shows a population of approximately 41,000.

The city is in the heart of one of the richest agricultural

sections of the South, the Red River Valley; thus its interests are predominantly of an agricultural nature. However, Alexandria has some 65 industries, 20 major and 40 minor manufacturing concerns, producing over 70 different articles.

For years the city has been known as one of the great lumber centers of the South. There are over 35 large lumber manufacturing plants within a radius of 60 miles, producing both hard and soft woods.

Alexandria is accessible to the four major groups of hardwoods in Louisiana; the upper Red River district, the Tensas basin, the Upper and Central Atchafalaya basin and the Mississippi alluvial basin. In these areas are to be found the largest group and stands of gum, tupelo, black gum, oak and other hardwoods. At the present rate of cutting, this supply is estimated to last for 50 years, and following this removal of virgin timber the second-growth acreage will amply supply the demand.

Building permits for 1929 totaled \$756,071, and postal receipts for the same period amounted to \$132,146.

### San Angelo, Texas



By PRESTON Y. CHUMLEY, Board of City Development.

**S**AN ANGELO is a city of 28,700 population. It is primarily a livestock center, the largest primary wool market in the world and the largest cattle trading point in West Texas. The wool industry reflects the most phenomenal growth, increasing from 4,700,000 pounds in 1923 to 16,000,000 for 1929. More than 40 per cent of the entire wool produced in Texas is concentrated in and shipped out of San Angelo, being produced in 10 counties immediately adjacent to the city.

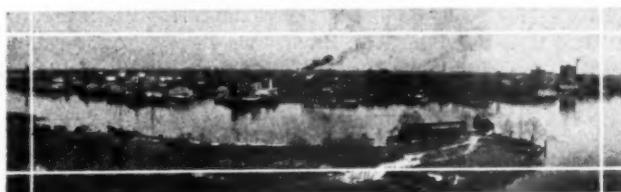
The mohair industry indicates a substantial growth both in quantity and quality; the finest grade mohair is produced in West Texas. San Angelo warehouses in 1929 handled more than 1,500,000 pounds. One new wool and mohair warehouse was constructed last year.

San Angelo ships 400 cars of cattle annually. Hereford stock has replaced the longhorn on West Texas ranges.

This city is the headquarters for some 60 major oil companies operating the Permian Basin west of San Angelo, the greatest potential oil field in the world.

Among leading industries are a refinery, cotton oil mill, foundries and iron works, railroad shops, utilities companies, and grain mill. Approximately 60 wholesale companies representing various lines of commodities are located in San Angelo. There are 64 dairies, with a total of 1800 cows producing the city's milk supply. Since 1924, when 962,000 gallons was produced, the industry has increased 139 per cent. Building permits for the city proper were \$2,308,088.

## Wilmington, North Carolina



By LOUIS T. MOORE, Wilmington Chamber of Commerce.

**T**HE Government estimate of Wilmington's population at present is 40,916.

Wilmington has experienced progressive development during the past year, especially as regards the lumber and petroleum products industry. It is estimated that half the gasoline used in North Carolina passes through this port. Several large companies have installed new river front terminals during the past few months. Several new lumber plants have also established, enlarged and extended.

The most significant event of Wilmington's progress was completion of twin bridges across the Cape Fear River here. These projects, which cost slightly over \$1,000,000, represent the accomplishment of a municipal dream of 50 years' standing. These bridges have opened Wilmington to the outside world and remove the necessity for use of ferries.

Building permits were approximately \$750,000. A million dollars would be closer the real value of building in the city limits, with additions for residential building in the suburbs, and about \$900,000 for industrial plants immediately beyond the city limits.

## Tyler, Texas



Fairchild Aerial Survey, Inc., Dallas

By RUSSELL S. RHODES, Chamber of Commerce.

**T**HE bringing in of a large oil field 25 miles east of the city has resulted in a big increase in the population of Tyler, an East Texas city of 22,500 people. With this increased population has come a stimulation to the city's commercial life, necessitating plans for new apartment buildings, residences and business buildings.

Agricultural activities are well diversified, Smith County having a good income from tomatoes, strawberries, blackberries and peppers, but heavy returns are not expected from this source until after the cotton harvest. The 1930 outlook is good.

In 1929 the city voted bonds for construction of a 293-acre municipal airport, a residential fire station, two new Junior High schools, and a new sewage disposal plant. Contracts calling for expenditures well over \$500,000 have already been let, and 1930 will see all these projects completed.

Building permits for 1929 were \$846,065. Tyler is not

classed as a strictly American Plan Open Shop community, some of our organizations using union labor and some being open shop.

## Ranger, Texas



Fairchild Aerial Survey, Inc., Dallas

By WAYNE C. HICKEY, Chamber of Commerce.

**R**ANGER has an estimated population of 8500, which is brought to 11,000 by the numerous oil camps located immediately outside the city limits.

Outstanding in industrial activity is the manufacture of natural gasoline, commonly called casinghead gasoline. Seventy plants for this purpose are located in and around Ranger within a 30-mile radius. Also there are several carbon black plants near the city. One of the largest rock crushers in Texas is at Tiffin, three miles north, and one of the largest electric light power plants in the state is seven miles southwest of Ranger on the Leon River.

Ranger is recognized as an Open Shop community.

One of the important events for 1930 will be improvement of the "Broadway of America," which traverses Eastland County and passes through Ranger. Right-of-way of this highway will be widened from 60 feet to 100 feet.

## Petersburg, Virginia



Photo from State Conservation and Development Commission of Virginia

By DAN S. HOLLENGA, Chamber of Commerce.

**T**HE population of Petersburg is now estimated at around 41,000.

Petersburg is the trunk center of the world, and also has the right to announce that it has the largest rayon knitted fabrics factory in the South.

Perhaps the most significant undertaking started by the city in 1929 was the filling in of the ravine that connects the city and a subdivision known as Walnut Hill. This fill will give a permanent roadway between the two districts.

During the year \$476,448 was spent in building construction. Petersburg is strictly American Plan Open Shop.

## UNITED GAS CORPORATION PLANS

New Company Would Own 2000-Mile Pipe Line System

Houston, Tex.—Plans have been determined by which the United Gas Corporation would acquire securities of the United Gas Company, of this city, and certain subsidiaries, of the Louisiana Gas & Fuel Company and of the Palmer Corporation of Louisiana. The United Gas Company in the meantime has financed and through its subsidiaries purchased properties in Texas and Louisiana formerly owned by the Magnolia Gas Company. The Palmer Corporation of Louisiana is a present subsidiary of the Louisiana Gas and Fuel Company, the latter being a present subsidiary of the Electric Power & Light Corporation, New York, which is controlled by the Electric Bond and Share Company of that city. If the plan is consummated, the new corporation will be a subsidiary of the Electric Power and Light Corporation and will have a corporate structure under which it will be entitled to issue: \$7 preferred, cumulative, non-voting stock; \$7 second preferred, cumulative stock, each share entitled to three votes; common stock, each share entitled to one vote, and option warrants, unlimited as to time. All stocks are to be without par value, the securities of the new corporation to be exchangeable under prescribed stipulations, for securities of the Houston Gulf Gas Company, Southern Gas Company, Dixie Gulf Gas Company, Dixie Gas and Utilities Company, Southern Gas Utilities, Inc., South Texas Gas Company and the Palmer Corporation of Louisiana.

The pipe line system to be owned and operated by the new organization extends from the Monroe and Richland gas fields in Louisiana to the Louisiana-Texas border, and from that point three main lines extend to Dallas and Fort Worth; to the Beaumont-Port Arthur district, and to the Houston district, with a branch line to the Beaumont-Port Arthur district—the system comprising a total of 2000 miles. A main line extends from the gas fields in Southwest Texas to the Houston district, three lines to the San Antonio district, one of which continues to Austin; a line to Laredo and one to Monterey, Mexico. The company will own the line from Baton Rouge to New Orleans, about 46 per cent of the stock of the Mississippi River Fuel Corporation, which owns the line from the Monroe-Richland fields to St. Louis, and interests in other pipe lines. It will also own gas reserves, leases and gas purchase contracts in the Monroe, Richland and other fields in Louisiana and in southwest Texas. The Moody-Seagraves interests and interests

of G. E. Barrett & Company, who have developed the United Gas Company system, will be interested in the new corporation and O. R. Seagraves, Houston, president of the United Gas Company, will be active in its affairs.

## United States Army Engineers Would Complete Lakes-to-Gulf Waterway in Two Years

Within 24 months, if the plans favorably reported by the Engineer Corps of the United States Army and unanimously adopted by the House Committee on Rivers and Harbors are carried out, the last link in a complete waterway from the Great Lakes to the Gulf by way of the Mississippi will have been completed.

When that is done, imports can be transshipped at New Orleans to the river barges for the journey up the river to Chicago and for distribution by rail or water to all the North Central and Northwestern States and Canada; the coal of West Virginia can flow down the Ohio, up the Mississippi to Chicago and so by water to the Northwest and even to Canada; the river ports of Alabama and Tennessee, on the Tennessee and Cumberland rivers, likewise will interchange water shipments with Chicago and the Northwest; while products of the whole Lakes region and of Canada will fill the barges for return voyages to all the points reached by the vast inland waterway system. No other

small waterway link will open so vast a field to navigation.

Before the bill went to the House Committee, President Hoover, Secretary of War Hurley, the Army Engineers and the Department of Justice had all passed favorably on the plan for the Federal Government to take over the responsibility for completion of the project and spend \$7,800,000 in completing what has already cost the State of Illinois \$20,000,000 and the Chicago Sanitary District \$70,000,000.

## \$1,000,000 Transmission Line

Louisville, Ky.—Construction of an 82-mile transmission line costing \$1,000,000 for the interchange of power between this city and Cincinnati is provided in a contract between the Louisville Gas and Electric Co. and the Cincinnati Gas and Electric Co. The route of the proposed line is from the Ohio Falls hydro-electric station of the Louisville company, across the Ohio River and extending to Madison, Ind., thence to Aurora, Ind., crossing the river back into Kentucky for a distance of 5 miles and re-crossing it to the Cincinnati company's new Columbia power station at the mouth of the Great Miami River in Ohio. Rights-of-way have been purchased and construction will begin at once. The current will be transmitted at 132,000 volts. The Bylesby Engineering and Management Corporation, Chicago, will handle construction.

## Railway Terminal Improvements at St. Louis

The new Express Building here illustrated was recently completed by the United Engineers & Constructors, Inc., New York, for the Terminal Railroad Association of St. Louis. Other projects completed last year for the Association include a new baggage room, a subway

extension and auxiliary facilities. The express terminal structure involved an approximate expenditure of \$800,000. It is of reinforced concrete, finished in brick, with two wings. One wing is four stories high, 60 feet wide and 220 feet long; the other is two stories high, 70 feet wide and 630 feet long.



Express Building Completed for Terminal Railroad Association

## LETTERS FROM OUR READERS

**Advocates Establishment by Federal Government of Community Farm Colonies in South Financed by Federal Appropriations**

Goodyear Yellow Pine Company.  
Picayune, Miss.

*Editor Manufacturers Record:*

The MANUFACTURERS RECORD has in my judgment obtained the highest recognition of any publication of its kind circulated in the South. I feel that its services have been most helpful in every respect. I have always agreed with you on the necessity of developing industry. I am not quite sure however that we fully agree as to the necessity of the demonstration proposed in the Simmons-Whittington Bill. However, as I have always found you practical, as I have always been a strong believer in the MANUFACTURERS RECORD and have gotten so much out of your editorials, I feel at liberty to present my views, with the hope and belief that if you can thoroughly understand the problem we are wrestling with here, you will see your way clear possibly to support the bill due to the fact that the need of such demonstration is so manifest.

The first of the year I became a director in the Federal Land Bank and Intermediate Credit Bank, in New Orleans. I had been a member of the committee, yet I was somewhat in doubt as to whether the demonstration would be as far-reaching as hoped for and as there was need for. However, since the first of the year, having given very close study to the proposition as confronting these institutions, I am convinced that it would be. The lack of system on the farm, lack of proper diversification and proper marketing facilities (the present system of agriculture being so void of system and organization) make it next to impossible to work out any plan where sound credit can be extended to those so much in need of assistance. This is undoubtedly the one great problem that is disturbing the Federal Farm Board.

The farmers' assistance first started from the furnishing merchant. Then the local banks took them over. Later it was thought that the Federal Land Bank, the Intermediate Credit Bank and the formation of co-operatives would make it possible for those who had been tenants or who had not been successful for themselves to become land owners and that a new set up would take place. However, this has only resulted in many who already owned their farms mortgaging them, buying automobiles, spending the money they obtained from the Federal Land Bank, and they are today in just as bad a condition as before they received assistance. Of course, this does not apply to all, but it does apply to a great number, and but few homes have

been bought and paid for by those who were previously tenants.

My study of the situation has led me to believe that proper demonstration is first necessary. This will develop the fact that the South is the only place in the United States where opportunities afford as wide a diversion, due to the long growing seasons. The base for diversification is much broader in the South than could be found in the grain states or in the North. Necessity for immediate development of the South is fast approaching. Development will contribute much not only to the South but to the many small farmers in the North whose problems are being increased yearly through the use of improved power driven implements. These implements enable one farmer to produce and harvest what required a dozen persons using horse-driven implements ten to fifteen years ago. This will, as time goes on, make it necessary for these people to seek homes elsewhere. The South has a large area of undeveloped lands that are cheap. Lack of demonstration to prove what is possible on these lands is possibly responsible for the lack of development, as well as for the lack of success. Once developed and put on a basis of the widest diversified number of products that can be used on the farm or marketed to advantage, the demonstration on these lands should put the Southern farmer, who would follow such set up, in a more independent position than the farmer located in other sections of the country.

Transportation on other farm products from other sections has been increased, and the difference in what the farmer receives for what he sells and what he has to pay for what he purchases has been broadened. At this time, his product does not purchase in return as much as it did when he sold his cotton for 5c to 7c per pound.

I am sure if you had been placed where I have been, right here on the ground, giving study and trying to make some of the demonstrations we are trying to make, that you would have a better understanding of the magnitude of the task of bringing these conditions about. Then, if you had had the responsibility of helping to work out plans of extending credit and could realize how impossible it is to extend any credit to those most in need of credit, under the present set up, you would yield to the experiment suggested in the Simmons-Whittington Bill. It would certainly save on the credit that must be extended much more than the cost, and I firmly believe some such experiment is necessary to hasten the day that better conditions may be brought about. With all the machinery the Government has I do not believe they can do what is expected by the people who are crying out for help until the necessary set up has been accepted and adopted and put into force, which will lead to the success so much hoped for. The shortest road to this is evidently to be found in demonstration.

Won't you please give this great problem further consideration and if you can see your way clear to support this bill, I know you are big enough to do it.

I hope you will take these suggestions in the spirit in which they are meant. I know if you can see your way clear to

agree with us that you are in position to render the most helpful service of any man in the country at this time.

L. O. CROSBY.

[L. O. Crosby, writer of the foregoing letter, is one of the foremost business men of the Central South. He expresses emphatically his advocacy of the plan for establishment by the Federal Government of community colonies in the South financed by Federal appropriation. In explanation of the position he has taken Mr. Crosby follows very much along the line of thought presented in recent letters to this paper by Hugh MacRae of Wilmington, N. C., and David R. Coker of Hartsville, S. C. These three men stand among the foremost business men of the South. They have given much study to every phase of Southern development and their views are worthy of careful consideration by the people of the South and the country at large.

Seeking always to find the truth, regardless of whether the truth is contrary to views previously expressed by the MANUFACTURERS RECORD or not, we are glad to publish what Mr. Crosby and others have said on this subject. It is true they have not yet converted us to believe their plan is the best that can be presented for cooperation, in the establishment of Federally financed communities, but they write from an intimate knowledge of farm conditions of the South. Mr. Crosby has long been identified with cut-over land development. Mr. MacRae is the founder of a successful farm colony established by him years ago, and Mr. Coker is a farmer on a large scale, a breeder of pedigreed cottonseed and is everywhere regarded as one of the foremost farmers and business men of the South.

Mr. Crosby as the head of a great lumber interest, studying as he has done for years the question of cut-over lands, has first-hand knowledge as to agricultural conditions in his state. Mr. Crosby, however, thinks that the use of improved power implements on Western farms will so reduce the number of farm laborers in the West that they will be compelled to seek homes elsewhere, and he believes they can be induced to move to the South if these demonstration colonies can be established to show the possibility of diversified agriculture in the South, but is it not true that improved agricultural implements, now being introduced freely into the South as in the West, will throw out of employment a good many Southern farm laborers, just as is being done according to Mr. Crosby's statement in the West? Moreover, is not the South at the present time undertaking to cultivate far more land than can be farmed to advantage, and is it not true that much of this land should go back into forestry?—Editor MANUFACTURERS RECORD.]

## IRON, STEEL AND METAL MARKET

### Production of Steel Maintained at Steady Pace

Pittsburgh, April 7—[Special.]—Steel ingot production in the first quarter of this year was approximately 12,250,000 gross tons, equal to a rate of 49,000,000 tons per annum. The rate in the last three or four weeks, with no material variation, has been just about the same.

Until 1928 no year showed as much as 47,000,000 tons, the closest approach being in 1926. In 1928 production was just over 50,000,000 tons and last year it was just under 55,000,000 tons. Thus this year to date has been at least a good average year or even more. For the remainder of the year a question is presented. Precedents all are that in anything like a normal year, production is a trifle less in the second than in the first quarter, and slips off materially for the second half. This year, however, did not start with normal conditions, there being depression whereby gradual and progressive improvement was expected.

Pig iron production in 1929 is officially reported at 42,613,983 gross tons, representing 11.7 per cent increase over 1928 and 5.6 per cent increase over 1923, which held the record until now. Pig iron production increases much more slowly than steel production, which made successive new records in 1925, 1926, 1928 and 1929. The divergence is due partly to iron foundry operations not increasing and to larger quantities of scrap being used in steel making, not from choice of steel producers or change in practice but because more scrap becomes available year by year.

Rail production last year is officially reported at 2,722,138 gross tons, representing a slight gain over 1928 but a loss from any of the three years preceding. Rail production is quite a steady matter and last year's gain may have been due to an unusual amount of production in the late months, against orders placed in the annual buying movement, chiefly for delivery in the present half year.

There is no well defined trend in steel tonnage at the present time. The rate of steel production has been practically steady for three or four weeks past. Mills have much less backlog than usual at this date, which is considered unfavorable, but as buyers are very conservative this may not count and it is clear that in some lines there should be substantial seasonal improvement. There is the automobile industry in particular, which has now had five months of light production, making just so much liqui-

dation of the unfavorable situation previously developed.

Louisiana & Arkansas has ordered 500 box cars from the General American Car Corporation and Gulf, Mobile & Northern 250 box cars from the American Car & Foundry Company. Freight car orders since January 1 total about 27,500 cars. On March 1 Class 1 railroads had 30,800 freight cars on order, against 34,381 January 1 and 43,486 May 1, 1929, the peak for several years.

Fabricated structural steel lettings reported last week were light, 22,000 tons. January and February, by the official reports, were very fair months, but lettings since then seem to have run about 20 per cent lighter.

To the surprise of the trade the Steel Corporation has announced reductions of about \$4 a ton on standard pipe, Boston casing, line pipe, O. D. pipe and oil country goods, covering substantially the whole range of welded tubular goods, seamless tubing not being touched. Pipe had not declined materially since the advanced lists of April 19, 1923, were issued, and the reduction was stated to be made to line up with declines in other steel products. Hot rolled strips are off \$1 to \$2 a ton and automobile sheets \$2 a ton while bars are easier at 1.80c to 1.85c. The general average of finished steel products is now the lowest since 1922 but meanwhile costs have been materially reduced.

### The Metals Still Suffer From Overproduction

New York, April 7—[Special.]—The evidence of overproduction has again been brought home to the metal industry during the past week. Predictions for copper in March mention an increase in surplus stocks of refined metal of as much as 30,000 tons, following a long series of prior increases. The promised curtailment of 40 per cent in zinc ore production in the tri-State district was not made or even approximated, the output of the last week for which figures are available having been as large as during preceding weeks. Production of pig tin in the Far East in April promises to be a new all-time high at around 10,500 tons, with shipments of about 10,000 tons, the realization of which fact sent tin prices down a full cent per pound on Tuesday, with a lesser decline the next day.

Steel has joined several of the non-ferrous metals in dipping to the lowest price levels since 1922. The Iron Age's composite price of finished steel is the

lowest since August, 1922. However the trend in steel operations has apparently turned, there having been a gain of 3 per cent in operations over the past week, the first rise since the middle of February.

At the same time there are evidences that consumption of the non-ferrous metals is increasing generally, though slowly. The automobile industry has a more cheerful outlook. Inquiries for fabricated structural steel recently have amounted to 70,000 tons, which implies an improvement in the building situation.

Copper consumers are using about 80 per cent as much red metal as they consumed last year. Public utility companies and the electrical equipment manufacturers are the leading consumers. The situation of lead is the most satisfactory among the metals. Supply and demand are very neatly balanced. Leading producers have booked up their April output almost completely. The zinc situation is probably the most depressed among the metals, largely because of overproduction. Sentiment in tin was improving until it became evident that April production would exceed all previous records.

The minor and rarer metals are in much the same condition as the major metals. Prices have an easy tone, supplies are too large and consumers are purchasing hand-to-mouth. Quicksilver is weak at \$119 per flask, with supplies both here and abroad more than liberal. Silver prices hover around 42c per ounce and but very few are optimistic concerning future appreciation of values. Even at 42c there is profit for most American producers. Mining costs are estimated at 20 to 40c per ounce and hence the selling price is not low enough to cause great curtailment of production. The antimony market has been very quiet since the sliding scale of duty was changed to the present flat rate of 2c per pound.

Selling of copper has improved quite decidedly. Export sales during March were the best so far this year, though during the first three weeks sales were running behind February. Domestic demand has improved considerably, with orders more numerous and with tonnages per order a little greater. However, strictly prompt shipment is still being asked. In fact, the style of business will probably continue in this manner until surplus stocks start to decline which may be in June or July.

An idea which is being advanced quite often these days is that the producers have won out in their fight with

consumers over stabilizing of the price. Be that as it may, consumers are still purchasing for delivery within ten days at the most whereas their old style of buying was for two to three months ahead. Moreover, many economists claim that the stabilizing scheme will eventually collapse as have many such plans in other commodities. At any rate fewer predictions of an impending price decline in copper have been heard of late.

About the most optimistic feature of the copper situation is the extremely low volume of stocks in the hands of consumers both here and abroad. Were there some development to lead consumers to believe that prices would advance there would undoubtedly be the greatest scramble to buy copper that the industry has ever seen.

Zinc prices probably reached a new low level since 1922. There is some doubt about the matter because of lack of sales with which to test prices, but according to rumors there have been offers to sell at 4.80c per pound, East St. Louis, as against the former price of 4.85c. However later in the week price trends changed and prices stiffened. The price of zinc ore has been reduced \$2 per ton to \$35 in the tri-State district, the first change in several weeks. Lead ore prices were marked up \$5 per ton following a similar rise in pig lead.

The world's visible supply of tin declined 600 tons last month. American tin deliveries were the third largest on record, a bullish feature, but the unfavorable predictions for April have nullified the other good statistical news.

#### Continued Improvement Noted in Birmingham District

Birmingham, Ala., April 7—[Special]—Better conditions are in effect in iron and steel circles with prospects of continued activity through the quarter and longer. The impetus in pig iron selling which started a month ago is still noted though round tonnages are not as frequent. Many melters are showing plans for increased production, the cast iron pressure pipe makers in particular having much business already on books and specifications in sight which will require large tonnages to fill. Other interests are reporting prospects that will require much iron.

Low freight rates by rail and steamship lines to the East, including Baltimore, Philadelphia, New York and Boston, put into effect October 1 last and first stipulated for April 1, 1930, have been extended to September 30, 1930, and a large amount of iron will be shipped in that direction. Solicitation has brought results and more business is in sight. Surplus stock of pig iron in

Alabama is to be removed through the summer, two independent producers already announcing that their surplus stock is not alarming.

Two blast furnaces are being made ready so that when conditions warrant they can be brought into service. The second quarter of the year will see greater production and larger tonnage delivered. Quotations in the home territory are firm at \$14, No. 2 foundry, considered very low by furnace interests.

Lettings for cast iron pressure pipe come in from the Southwest, far-West and Northwest. A few sales are being made in the South. There is a splendid distribution of business, all companies receiving a proportionate share. Pipe shops are operating five days a week, in the main, with three shifts a day as the rule.

The steel market is also showing an improving inclination with fabricating shops very busy, some departments being operated at night. Virginia Bridge & Iron Company is fabricating 260 tons of steel for one of the underpasses which railroads and the City of Birmingham will install in the elimination of grade crossings through the heart of the city. The company is also fabricating 1300 tons of structural steel for the new sheet mill of the Gulf States Steel Company at Gadsden; the Ingalls Iron Works Co. is fabricating 700 tons for the same mill. Other work in the structural line is being produced, including steel for a viaduct in Atlanta, and for an additional building to the big DuPont development at Old Hickory, near Nashville. Other steel interests report activity, the tank builders having contracts in hand which will require plate.

In the steel industry it is still estimated that ingot production is above 90 per cent capacity and the finishing mill operations between 75 and 80 per cent. Two open hearth furnaces at Gadsden at the plant of Gulf States Steel are under repairs and will be increased from 75 to 90 tons each. All but three open hearth furnaces of the Tennessee Coal, Iron & Railroad Company at Ensley and Fairfield are in operation and doing well.

Engineers Club of Birmingham together with a number of representatives of iron and steel corporations and business concerns of the district made a tour of inspection of the plant of the Gulf States Steel Company the past week. The new blooming mill is in operation and the plate mill, a universal plate plant, is being rushed to completion and will be in operation by June 15. Foundations for the new sheet mill are going in rapidly; the mill will be ready for operation in August or September. The plant of the Gulf States Steel was a revelation to many. Despite the fact that negotiations are under way looking

to merger with the Republic Steel Corporation, the expansion plans heretofore announced are being pushed.

Announcement is looked for in the next few weeks as to the sheet mill which will be built by the Tennessee Coal, Iron & Railroad Company, intimation being that a large and modern plant is proposed.

The coal mining industry lags. Official figures are now being collaborated by the Chief State Mine Inspector, W. B. Hillhouse on the output in 1929 and indications are it will be around 18,350,000 tons. Future prospects for coal are not as bright as they might be except as to development from a chemical standpoint.

Pig iron and iron and steel scrap quotations are as follows:

#### PIG IRON

No. 2 foundry, 1.75 to 2.25 per cent silicon, f. o. b. furnaces, \$14.00; No. 1 foundry, 2.25 to 2.75 per cent silicon, \$14.50; iron of 2.75 to 3.25 per cent silicon, \$15.00; iron of 3.25 to 3.75 per cent silicon, \$15.50.

#### OLD MATERIAL

Old steel axles.....	\$14.00 to \$15.00
Old iron axles .....	14.00 to 15.00
Old steel rails.....	11.00 to 12.00
Heavy melting steel.....	10.50 to 13.00
No. 1 cast.....	10.00 to 11.00
Stove plate .....	10.00 to 11.00
No. 1 R. R. wrought.....	10.00 to 11.00
Old car wheels.....	10.00 to 11.00
Old frame wheels.....	11.00 to 12.00
Machine shop turnings.....	7.00 to 8.00
Cast-iron borings .....	7.00 to 8.00
Cast-iron borings, (Chem)....	12.00 to 13.00

#### South Increased Its Pig Iron Output in 1929

The record pig iron production of the United States in 1929, according to the American Iron and Steel Institute, amounted to 42,613,983 tons, of which 856,768 tons were ferro-alloys. Increase in the total output, compared with 1928, was 4,458,000 tons. The South's pig iron production in 1929 was 4,879,000 tons, compared with 4,562,000 tons in 1928. Production in the South last year was more than one-third of the amount of pig iron made in the entire country in 1920.

Of the 299 blast furnaces in the United States, 155 were operating December 31, 1929, as compared with 213 in blast June 30, 1929. On December 31, 1929, the South reported 27 furnaces in blast and 32 out of blast, or a total of 59 for the whole South.

#### Production of Pig Iron and Ferro-Alloys by States

States	1928	1929
Massachusetts .....	2,562,715	3,025,282
New York, New Jersey .....	12,422,602	14,453,251
Pennsylvania .....	1,050,870	1,186,204
Virginia .....	2,546,009	2,709,881
West Va., Kentucky .....	864,922	864,201
Tennessee .....	110,837	138,753
Ohio .....	9,008,739	9,795,648
Illinois .....	3,942,412	4,357,971
Indiana, Michigan .....	4,583,065	5,085,615
Wisconsin, Minnesota .....	339,267	379,162
Iowa, Colo., Utah .....	634,270	638,015
Total—Gross Tons .....	38,155,714	42,613,983
Pig Iron .....	37,401,618	41,757,215
Ferro-alloys .....	754,066	856,768

## HIGHWAYS AND MOTOR TRANSPORT

### For Better Asphalt Pavements

Atlanta, Ga.—For the purpose of co-operating with engineers, contractors, state, county and city officials in the interest of more and better asphalt pavements, Asphalt Service, Inc., was recently organized in this city with W. R. Neel as engineer-director. It will function in co-operation with contractors in Virginia, North Carolina, South Carolina, Tennessee, Georgia, Florida and Alabama, inviting into its membership all reputable asphalt contractors. The organization plans to maintain a competent engineer in each of the Southern state capitals and a representative in Washington, who shall keep in close touch with the Bureau of Public Roads, discussing with engineers of the Bureau types of bituminous pavement and specifications for them. It will maintain a Research Department under the direction of a chemical engineer, who will confer with and co-operate with professional chemical engineers for the development of better asphalt streets and highways.

### Highway Safety Conference

The third National Conference on Street and Highway Safety has been called by Secretary of Commerce Robert P. Lamont to convene in Washington on May 27 to 29, inclusive. Subjects relating to many unsafe driving practices that contribute to the toll of accidents and reduce the factor of safety in using the highways will be discussed, including carelessness in driving, excessive speed for highway conditions, and improper turning, passing and parking.

### Named Consulting Engineers for West Virginia Bridges

The J. E. Greiner Co., Baltimore, has been named consulting engineer for the State Bridge Commission of West Virginia, Charleston, for all bridge work to be carried out under its program of acquiring and replacing existing bridges and constructing new bridges over a period of years.

### \$12,000,000 Road Program

Atlanta, Ga.—Captain J. W. Barnett, formerly the manager of waterworks, streets and lighting of Athens, Ga., on April 1 succeeded Colonel Sam Tate of Tate, Ga., as chairman of the State Highway Board of Georgia, Colonel Tate having been forced to relinquish the work because of the tax on his

physical strength. The Board has paid indebtedness of \$3,000,000 and about \$700,000 to repair flood damage, beside matching \$2,000,000 of Federal funds for road building. It now has \$1,500,000 cash on hand and is ready to match further Federal aid funds, going forward with a \$12,000,000 road building program this year.

### Tennessee Asks Road Bids

Nashville, Tenn.—The State Highway Department opens bids April 25 for seven road and bridge projects as follows, highway work to cover approximately 32 miles:

**Cannon County**—Grading and drainage on 9.5 miles between Woodburg and the Kalb County line and building three bridges

**Cheatham County**—Concrete and steel bridge over Cumberland River at Ashland City

**Cooke County**—Paving 8.5 miles of route No. 9 near Newport

**Dyer County**—Paving 9.9 miles between Fowlkes and Crockett county line

**Haywood County**—Grading and drainage on 4.153 miles across Forked Deer Bottom and building 6 concrete deck girder bridges on concrete pile bents

**Knox County**—Grading and drainage on approaches to bridge over Tennessee River at Knoxville

**Trousdale County**—Steel and timber bridge over Cumberland River near Hartsville.

### \$1,450,000 Road Bonds Voted

Crockett, Tex.—A bond issue of \$1,450,000 has been voted by Houston County to build a system of lateral roads and supply the county's portion of funds for improving state highways in the county. Highway No. 19, one of three important routes between Houston and Dallas, passes through this county, competing with route No. 32, a few miles west, which passes through Leon County.

### Annual Meeting American Road Builders' Association

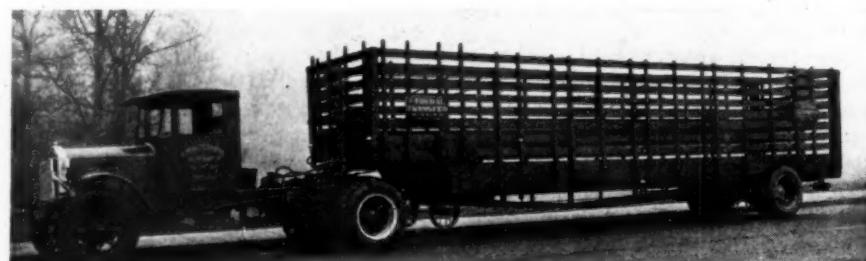
The annual meeting of the American Road Builders' Association, Charles M. Upham, engineer-director, Washington, will be held in Washington on May 15, followed by meetings of the City Officials' Division and the County Highway Officials' Division on May 16. Officers and directors elected at the recent convention in Atlantic City will be installed at these meetings and reports of the president, treasurer, engineer-director and board of directors of the association will be received.

## Truck Tractor-Trailer of Large Capacity

Many uses are found for the truck tractor-trailer unit pictured herewith, and owned by the Federal Transfer Co., Baltimore. The trailer is the product of the Trailmobile Co., Cincinnati, Ohio, represented in Baltimore by the Peters Trailmobile Co.; it is equipped with dual tires, the body is all-steel construction with exception of the side and end gates; it has a carrying capacity of 20,000 pounds, a length of 36 feet, is 7 feet high and 93 inches wide. The truck-tractor is the product of the Sterling Motor Co., Minneapolis, Minn. A vacuum brake system is used on the wheels of the tractor and trailer. The unit is being used within a radius of 140 miles of Baltimore.

Recently a Baltimore firm received a contract for window frames required on a job to be started in New York the following day, and the order was placed with the understanding that frames would be on the job in time to prevent any delay in construction operations. Accordingly the Baltimore firm concentrated efforts on getting the frames out and arranged to have them loaded on the trailer at 2 o'clock in the afternoon. The last frame was loaded before 5.30 o'clock and the unit started for New York. Next morning when workmen reported on the job the frames were there awaiting them.

The Federal Transfer Company also operates seven trucks, including six Whites and one Chevrolet.



This Unit Has a Variety of Uses and Carries a 20,000-pound Load

## NEW AND IMPROVED EQUIPMENT

### Automatic Oil Circuit Breaker

An oil circuit breaker, type "FO-22," announced recently by the Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., is intended particularly for outdoor service as it remains weather proof under severe weather conditions. The breaker is designed primarily for pipe or structural steel frame work mounting, or can be adapted to wall or pole mounting, and is arranged for either manual, d-c. solenoid or a-c. solenoid operation. The solenoid mechanism bolts directly to the manually operated breaker, so the change from manual to electric operation and vice versa can be made with little difficulty.

The breaker is available in two or three pole single throw sizes in capacities of 400, 600 and 800 amperes for operating voltages of 7500 or less, and with an interrupting capacity of 3500 amperes at 7500 volts.

### Portable Hoist

An all-steel hoist, the "Beckwith 5-Ton Wonder Hoist," is announced by the Beckwith Machine Co., Ravenna, Ohio. It is portable, with three major moving parts, the drum, the intermediate gear and driving pinion, all mounted in a strong and light frame and revolving in heavy duty, anti-friction babbitt bearings. The frame has a six point bearing contact to provide a firm foundation for overcoming possible twisting under stress. The new device is adapted to many types of construction work, lifting and placing posts, beams and girders, hoisting brick or cement, laying pipe, and for other jobs where immediate availability of power is a major consideration. The hoist is made of electric furnace steel and handles loads up to 5 tons.

### Wide Use of Stonhard Products

Products of the Stonhard Company, Philadelphia, Pa., while designed primarily for floor, wall and roof resurfacing, are also being widely used in road and other construction. Surbond, a heavy duty material, may be used for repairing sidewalks, driveways, roadways, railroad crossings, roundhouse floors and similar facilities. In addition to Surbond, Stonhard products include Concretite, used to repair and protect concrete floors against the grinding effect of traffic and trucking; Crackseal, made for waterproofing and airproofing leaks that occur in many forms of building construction; liquid roof cement, a compound applied by asbestos brush to protect roofs, metal

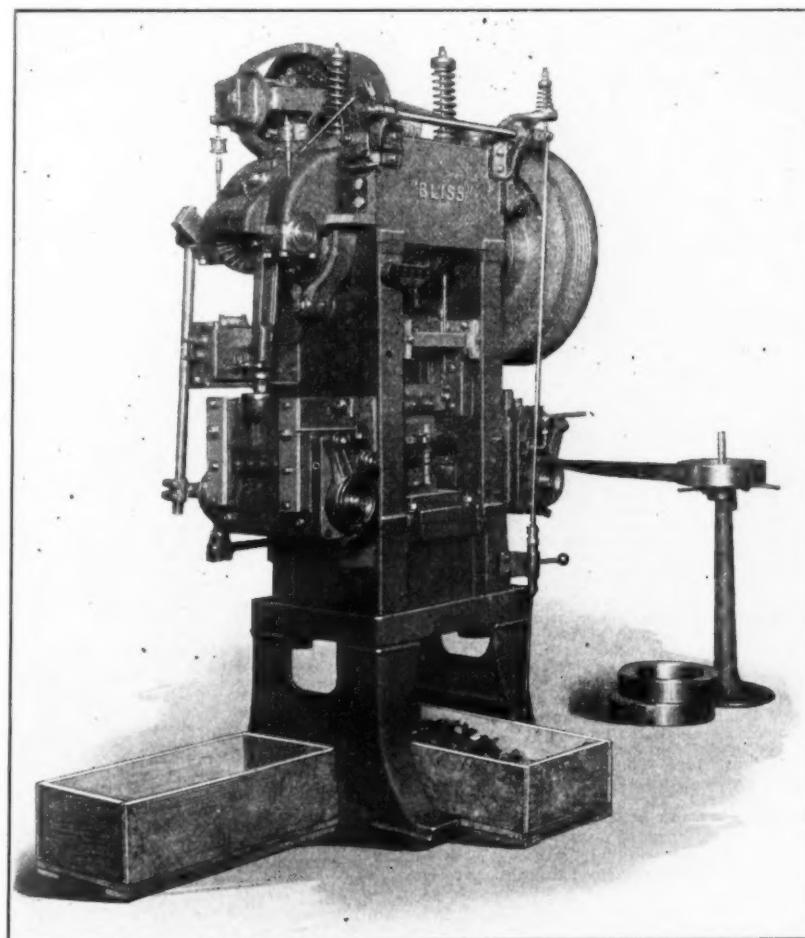
sidings, flashing, gutters and other exterior surfaces; plastic roof cement for use on concrete, iron, tin, felt and composition roofs; paint cleaner which is said to make it possible to renew soiled painted surfaces at a small fraction of the cost of repainting; a resurfacer used for resurfacing ruts, holes and broken out places in warehouses, factories, railroad station platforms and many other places, and a wood floor preservative for the protection and finish of wood floors

in factories, warehouses, schools, department stores and other buildings. Other products of the Stonhard Company include integral mix, protection coat, acid proof coating and a concrete floor hardener. All these with their various applications, are fully described and illustrated in folders the company is distributing, and its Research and Engineering Departments are available to assist with unusual and troublesome floor maintenance problems.

### Bliss Scrap Shear

A new type scrap shear on all high production presses manufactured by the E. W. Bliss Company, Brooklyn, N. Y., is described as a "simple, sturdy mechanism built with all the fineness of adjustment of the Bliss squaring shears." The shear slide is driven from an eccentric on the extended crankshaft of the press through a standard ball joint connection, with the eccentric so arranged that the scrap cutter is timed 30 degrees behind the press slide, giving

ample time for the pilots to locate the strip before the shear blades lock it. Regular press gibbing is used for the shear slide and take-up screws are provided, so that a tight sliding fit may be obtained. Upper shear blade is mounted in an adjustable holder similar in function to the table of a squaring shear, making it possible to obtain a fine clearance between blades. Shear blades are made of Neor steel when used to cut the hard silicon steel required for radio, motor and power transformer laminations.



Bliss Shear Type Scrap Cutter

# CONSTRUCTION DEPARTMENT

## and

# NEW ENTERPRISES

Covering the initial announcements of new undertakings with additional information about enterprises previously mentioned. The date at the end of an item indicates preliminary facts were given in a previous issue.

When writing to a new firm or corporation the name of at least one of the incorporators should be placed on the envelope to expedite its handling by the local postoffice. Mail may be delayed unless complete address is given.

**Building and Construction Proposed and Contracts Awarded; Manufacturing, Mining, Power, and Land Developments; Public Works; Transportation; Communication; Financial Enterprises; New Business Opportunities Reported in the Sixteen Southern States.**

The Daily Construction Bulletin of the Manufacturers Record gives each business day advance news published in this weekly review. It is invaluable to those requiring prompt information. Subscription price \$40.00 a year.

### Airports, Airplane Plants, Etc.

Ark., Eureka Springs—Chamber of Commerce completing arrangements for obtaining funds and acquiring site for airport; Airport Committee includes: R. R. Thompson, L. G. Roark and Perry C. Mark.

Ark., Fayetteville—City votes May 8 on \$20,000 bonds for adding land, constructing buildings and other improvements at airport.

Ark., Fayetteville—City plans voting on \$20,000 bonds for airport improvements.

Ga., Atlanta—Blevins Aircraft Corp., Jno. H. Candler, Pres., Candler Field, remodel hangar recently acquired by enlarging shop; install shop equipment. 4-3

N. C., Charlotte—City may vote on \$250,000 bonds for airport.

Tex., Amarillo—E. E. Bidwell, Wichita, Kans., reported, establish airplane plant to manufacture 5-place cabin planes.

Tex., San Antonio—City, C. M. Chambers, Mayor, votes May 7 on \$100,000 bonds for improvements. Winburn Field. 4-3

Tex., San Benito—Agar & Gentry, San Benito, have contract for pipe work on San Benito emergency landing field; leveling field and other dirt work completed by H. B. Baldwin, San Benito; tower for revolving beacon erected and lighting equipment to be installed soon; part of Brownsville-Houston and Brownsville-San Antonio Airways; to be operated by U. S. Dept. of Commerce, Washington.

Tex., Uvalde—Uvalde-Del Rio-Eagle Pass Flying Service, Inc., recently formed by Dolph Briscoe, A. B. Mayhew and associates, acquired 500 acres, U. S. Hwy. No. 90, for airport; flying schools will be established at Del Rio, Eagle Pass and Uvalde. 4-3

### Bridges, Culverts and Viaducts

#### Proposed Construction

Ala., Mobile—State Highway Comsn., Montgomery, receives bids April 30 for 150-ft. swing span bridge over Three Mile Creek on Telegraph road, Mobile County, 38-ft. conc. approach span, 3000 cu. yd. excavation; R. D. Jourdan, State Highway Engr.

Ark., Clarendon—State Highway Comsn., Little Rock, probably let contract about middle of May for bridge across White River at Clarendon. 1,500 ft. conc. column and girder approach on Clarendon side, steel cantilever 720 ft. long, about 7,500 ft. steel girder construction on conc. columns and bases; about 3,600 tons steel for main bridge and approaches; main piers to be sunk by pneumatic process; foundations for approaches will rest on conc. pedestals, supported on conc. piles; awaiting approval of War Dept.; Ira G. Hedrick, Inc., Consult. Engrs., 1132 Central Ave., Hot Springs National Park, Ark. 3-13

Arkansas—State Highway Comsn., receives bids for 9 bridges. See Roads, Streets, Paving.

Ga., Augusta—State Highway Comsn., Atlanta, probably receive bids soon for bridge over Sand Bar Ferry, Route 50, Richmond County.

Louisiana—War Dept., Washington, approved revised plans Louisiana Highway Comsn., Baton Rouge, for bridge across Barataria Bayou, at Wagner's Ferry; providing 10.5 ft. vertical clearance above average high tide.

Louisiana—Louisiana Highway Comsn., received low bids for 3 bridges. See Roads, Streets, Paving.

La., New Orleans—City Comsn. Council received low bids for superstructures for 5 vehicular bridges: Over Melponene Canal, at White St., Alvin M. Fromherz, I. & C. Bldg.; over Washington Ave. canal, Tholia St., J. A. Petty & Sons, Inc., Godchaux Bldg.; over Palmetto Canal, at Cambronne Ave. and at Hamilton St., Alvin M. Fromherz. \$8,995; over Almonester Canal, Florida Ave., J. A. Petty & Sons, Inc. 3-20

Maryland—State Roads Comsn., Baltimore, receives bids April 15 for reconstructing floor, on bridge over Monocacy River on Urbana Pike at Frederick Junction, Frederick County, Cont. F-144-511; Wicomico County—proposed dam to be built at bridge on road from Salisbury to Princess Anne, over Wicomico River, known as Allen's Mill Pond, Cont. W-57-111; G. Clinton Uhl, Uhl, Chmn.

Md., Towson—State Roads Comsn., Baltimore, receives bids April 15 for proposed extensions to double span conc. bridge on Gwynn Oak Ave. over Gwynn Falls, Baltimore County, Cont. B-105-411; G. Clinton Uhl, Chmn.

Mo., St. Charles—Wabash Ry. Co., M. F. Longwill, Ch. Engr., St. Louis, plans double-track bridge across Missouri River at or near St. Charles. 1/2 mi. down stream from bridge it will replace; 3 channel spans each 420 ft. long, with 400-ft. clear waterway between piers; 420-ft. approach span on west side, two 225-ft. each approach deck spans on east bank; 2,150 ft. viaduct approach on west bank, and 4,304 ft. viaduct approach on each bank, total length of project 8,640 ft., cost about \$3,500,000; awaiting confirmation from War Dept., Washington; Maj. John V. Gotwals, U. S. Engr., hold hearing April 10. 12-5

Oklahoma—State Highway Dept., Oklahoma City, and of Texas, Austin, receive bids April 23 for 1,500-ft. bridge over Red River between Marietta, Okla., and Gainesville, Tex.; A. R. Losh, State Highway Engr., Oklahoma City; Gibb Gilchrist, State Highway Engr., Texas.

Oklahoma—State Highway Dept., Oklahoma City, plans 4 bridges: Major County—6-span, 96-ft. rein. conc. bridge at Orienta, cost \$25,000; Woodward County—3 span, 270-ft. steel truss bridge on piers, at Belva, cost \$45,000; Grant County—5 span, 96-ft. rein. conc. trestle bridge, near Nash, cost \$30,000; Craig County—6 span, 96-ft. rein. conc. bridge over Cabin Creek, near Welch; cost \$30,000; A. R. Losh, State Highway Engr.

Okl., Fairview—Major County plans extending about \$35,000, for 9 span, 140-ft. rein. conc. bridge; F. C. Magruder, County Engr.

S. C., Cottageville—War Dept., Washington, approved plans State Highway Dept., South Carolina, Columbia, for bridges across Edisto River at Hart's Bluff, 5 mi. from Cottageville. 1-30

Tex., Corsicana—Navarro County considering bridge at Porter's Bluff on Trinity River between Navarro and Henderson Counties; cost about \$40,000.

Tex., Fort Worth—Tarrant County plans 2-way bridge: Steel and concrete bridge over Clear Fork, Trinity River at Twelfth St.; cost \$40,000; D. Davis, County Engr.

Tex., Fort Worth—Tarrant County completing plans for new span to replace present Ten-Mile Bridge; Damon A. Davis, County Engr.

Tex., Houston—Harris County, Norman Atkinson, County Judge, has \$280,000 available for underpass on 10 roads, including Katy, Telephone, Humble, Almeda road, and Eureka Underpass; plan expending \$110,000 for bridges on Market St. Post Oak and Goose Creek-Morgans Point roads; H. L. Washburn, County Auditor. 4-3

Tex., North Amarillo, Amarillo—City, Ernest Thompson, Mayor, considering viaduct; \$100,000 available.

Tex., San Antonio—City, C. M. Chambers, Mayor, plans expending \$175,000 for bridges.

Tex., Waxahachie—State Highway Comn., Austin, probably receive bids in April or May, for \$180,000 overpass on Highway No. 6, south of Waxahachie, Ellis County, on main Dallas-to-Hillsboro Highway; Gibb Gilchrist, State Highway Engr.; G. G. Wickline, Bridge Engr.

Virginia—See Roads, Streets, Paving.

Virginia—State Highway Comn. receives bids for 4 bridges. See Roads, Streets, Paving.

Va., Chincoteague Island—State Highway Comn., Richmond, considering road from state highway to bridge, also causeway and bridges connecting Chincoteague Island with mainland in Accomac County, paralleling Chincoteague Bridge Co.'s link; toll free.

Va., Norfolk—City, Walter H. Taylor, 3rd, Dir. of Public Works, receives bids April 17 for double leaf bascule draw span over Lafayette River, at Granby St., each leaf 25 ft. long, 54 ft. wide; B. Gray Tunstall, City Treas.

Va., Norfolk—War Dept., Washington, approved plans city of Norfolk, Walter H. Taylor, 3rd, Dir. of Public Works, for bridge across northerly arm of Lafayette River, between Talbot Park and Lakewood, at Norfolk. 2-27

Va., Portsmouth—City, Frank C. Hanahan, Mgr., contemplates 500-ft. wooden bridge over creek dividing two residential sections, cost about \$15,000 or \$16,000; advises nothing definite has been decided in reference to City Park Bridge, calling for redecking old wooden deck on steel construction, about 800 ft. long, cost \$7000 to \$10,000; probably start both improvements in near future.

West Virginia—State Road Comsn. received low bids for 2 bridges and culverts. See Roads, Streets, Paving.

#### Contracts Awarded

Ala., Birmingham—Virginia Bridge & Iron Co., Roanoke, reported, has contract to fabricate 360 tons cast iron pipe for Fourteenth St. underpass.

Ark., Batesville—Comms. of Bridge Improvement Dist. No. 1, Chas. W. Barnett, Chmn., let contract to Luten Bridge Co., Mercantile Bldg., Knoxville, at \$67,000, for

40-ft. wide rein. conc. bridge across Polk Bayou, Batesville; Hugh R. Carter, Engr., 800 Wallace Bldg., Little Rock. 3-20

Okla., Oklahoma City—City, M. Peshek, Clk., let contract to Virginia Bridge & Iron Co., Roanoke, Va., for 800 tons struct. shapes for Exchange Ave. Bridge. 3-27

Tenn., Knoxville—Knox County Highway Comsn., E. D. Jeffries, Supt. of Roads, let contract to Southern Construction Co., 615 S. Eleventh St., Birmingham, Ala., at \$229,154, for bow string type McBee Ferry Bridge; to Steel & Lebby, Holston Bank Bldg., Knoxville, at \$160,863, for open spandrel type Solway Bridge; awaiting approval from War Dept., Washington, to start construction. 1-9

### Canning and Packing Plants

Florida—M. C. Britt, Winter Garden, reported, erect 4 vegetable packing plants, Linden, Alachua, Fla., Denmark, S. C. and Maxton, N. C.

Fla., Bradenton—Palmetto Canning Co., install canning plant in Howze Bldg., Lemon St.; install additional equipment.

Fla., Creatview—Rice's Superior Blueberry Nurseries, Inc., S. Rice, Pres., has 600 acres in Okaloosa county, developing 100 acres in blueberries; will clear, fence, erect factory for making blueberry jelly; expend \$50,000 during next 5 yrs.; erect small building and warehouse now. See Want Section—Machinery and Supplies and Miscellaneous. 4-3

Fla., Nocatee—Nocatee Packing Co., incorporated; T. S. Chatham, J. W. Freeman.

Fla., Williston—J. W. Booth, 318 Henderson Ave., Tampa, and associates, reported, completing plans for enlarging packing plant on property of Seaboard Air Line Rwy. Co.; increase capacity to 10 cars; also build additional plant at Morrison, 40x50 ft.; both plants will be operated by Mixson & Newsom.

S. C., Bennettsville—Iodine Vegetable Cannery construct vegetable cannery on property of R. L. Kirkwood; capacity 10,000 cans daily.

Tex., Jasper—Roland Jones, Nacogdoches, and associates interested in establishment of canning plant; Allen A. Few and C. C. Brown, Local Committee.

### Clayworking Plants

N. C., Hendersonville—Sherrill Clay Products Co., capital \$125,000, incorporated; L. B. Prince, 4th Ave. W.

### Coal Mines and Coke Ovens

Ky., Spottsville—Flower Coal & Mining Co., capital \$12,000, incorporated; Homer L. McDonald, Harry G. Wells.

### Concrete and Cement Plants

Tex., Brownsville—Gulf Concrete Pipe Co. plans expansion and improvements including installing additional equipment; reported, plans early establishment of 2 branch plants in other cities, costing over \$75,000 with equipment.

### Cotton Compresses and Gins

Mississippi—Benton Gins, Inc., Yazoo City, reported, acquired gin owned and operated by Nichols & Stubblefield, at Vaughan; plan removing gin at Deasonville to Fugate. 4-3

### Drainage, Dredging and Irrigation

Florida—U. S. Engr. Office, Jacksonville, let contract to Atkinson Dredging Co., Savannah, Ga., for emergency dredging in old Florida East Coast Canal, beginning at Matanzas Inlet, 20 mi. south of St. Augustine; approx. \$4,000,000 appropriated to dredge and maintain canal, Jacksonville to Miami. 1-16

Fla., Clewiston—Seminole Farms, John K. Mowry, Resident Engr., proceeding with overhead irrigation system; starting constructing buildings: conc., steel, metal, lumber, metal lath. See Want Section—Miscellaneous.

Fla., St. Petersburg—See Miscellaneous Construction.

La., Woodlawn—Woodlawn Drainage Dist. No. 1, Eba Miller, Chrmn., voted \$100,000 bonds for drainage system to serve 27000 acres; E. B. Parent, Engr., Bell City.

Miss., Aberdeen—Comrs. of Shuqualochie Drainage Dist. No. 1 of Clay and Chickasaw Counties, office of McFarland & Holmes, open bids Apr. 14 for constructing drainage canal about 3 1/4 mi. long; \$3,000 cu. yd.; also for clearing right-of-way for canal; L. E. Fish, Engr., Aberdeen.

Miss., Blue Mountain—New West Hatchie & Owl Creek Drainage Dist., Tippah County Bd. of Supervisors, care J. E. McElwain, Clk., voted soon on \$18,750 drainage bonds.

Tex., San Benito—Cameron County Water Improvement Dist. No. 10, J. C. Douglas, Pres., opens bids May 1 for constructing approx. 520,000 sq. ft. conc. canal lining with necessary earth work.

### Electric Light and Power

**Electric light and power work in connection with many LAND DEVELOPMENT operations involves the expenditure of large sums of money. See that classification for details.**

Arkansas—Arkansas-Missouri Power Co., 72 W. Adams St., Chicago, Ill., applied to Federal Power Comsn., Washington, for license for transmission line on public lands in Fulton County, extending from Mammoth Springs to point between Imboden and Black Rock, distance of 1 mile to serve Imboden, Walnut Ridge and other points.

Ark., Paragould—Common Council, reported, has estimates by W. A. Fuller Co., 2916 Shenando Ave., St. Louis, Mo., for light and power plant in connection with water works system, cost \$225,000.

D. C., Washington—Samuel J. Prescott Co., Inc., 814 13th St., N. W., has contract for 5-story storage and distributing plant at Florida Ave. and 10th St. for Potomac Electric Power Co., 14th and G Sts.; A. B. Heaton, Archt., 1211 Connecticut Ave., N. W.

Ky., Louisville—Louisville Gas & Electric Co., and Cincinnati Gas and Electric Co., Cincinnati, O., signed contract to construct electric transmission line, 62 miles and costing \$1,000,000 for interchange of power between Louisville and Cincinnati; line will be from Louisville Co.'s Ohio Falls hydroelectric station, crossing Ohio River and extending to Madison, Ind., Aurora, Ind., crossing river back into Kentucky for distance of 5 miles and crossing river to Cincinnati Co.'s Columbia power station at mouth of Great Miami River in Ohio; right of way purchased, construction to begin immediately; line to be in operation in fall; normal capacity 40,000 kw, with electricity being transmitted at 132,000 volts; Byllesby Engineering and Management Corp., 231 S. LaSalle St., Chicago, Ill., will handle construction details. 8-5

La., Monroe—City Planning Comsn. recommended installation of white way system.

La., Morgan City—Southwestern Light & Power Co., Inc., capital \$100,000, incorporated; J. B. Clark, Golden Meadows; Paul Kurzweg, Morgan City.

La., Pineville—Tooke & Reynolds, Arcadia, reported, has electric light franchise.

Maryland—Public Service Comsn., Garrett Bldg., Baltimore, approved consolidation of 11 utility companies, serving Eastern Shore of Maryland, Delaware and Virginia, into Maryland Light & Power Co.; companies include Maryland East Coast Utilities Co., Betterton Ice & Electric Co., Betterton; Home Electric Co., Lonaconing; Antietam Electric Light & Power Co.; Midland Electric Co., Cecilton Electric Light & Power Co., Trappe Electric Light Co., Love Point & Power Co., Somerset Electric Co., and Suburban Electric Power Co.; Maryland Light & Power Co. recently noted incorporated as subsidiary of Empire Public Service Co., 1600 Arch St., Philadelphia, Pa. 2-6

Md., Baltimore—Stockholders of Consolidated Gas, Electric Light & Power Co., Lexington Bldg., voted ratification of sale to company of property and assets of Woodbine Light & Power Co.; also to increase total authorized capital stock from 1,200,000 shares of common and 300,000 shares of preferred to 2,000,000 of common and 500,000 of preferred shares and to classify increased as preferred stock Series A. 3-27

Md., Rockville—Potomac Electric Power Co., 14th and G Sts., N. W., Washington, D. C., reported, revamp town's lighting system.

Miss., Maben—Bd. of Aldermen, reported, granted power franchise to Mississippi Power Co., Gulfport.

Miss., Purvis—Mississippi Power Co., Gulfport, reported, acquired electric plant.

Miss., West Point—City rejected offer of Mississippi Power Co., Gulfport, for power and light plant. 1-30

Miss., Yazoo City—City, reported, let contract to General Electric Co., Schenectady, N. Y., for 2000 kw. turbine; expending \$100,000 for power plant improvements. 3-27

Mo., California—City, reported, having plans prepared by Alexander Engrg. Co., Springfield, for \$45,000 power and light plant. 3-20

Mo., Sikeston—City voted \$150,000 bonds; construct light plant and distribution system. 3-20

N. C., Hickory—E. M. Yoder and associates interested in power line River and Jacobs Fork township; 6000 volts.

N. C., Wilson—Westinghouse Electric & Mfg. Co., 501 Lang Ave., East Pittsburgh, Pa., reported, has contract in connection with light plant improvements, at \$83,900 for turbo-generator, at \$2185 for generator air cooler, and \$12,988 for switchboard and accessories; Foster Wheeler Corp., 105 Broadway, New York, at \$30,000 for condensing equipment; R. D. Cole Mfg. Co., Newnan, Ga., at \$2100 for smoke flues and airducts; McCabe Construction Co., \$6200 for brick work; DeLaval Steam Turbine Co., Trenton, N. J., at \$5000 for turbine driven feed pumps; Cochran Corp., 3107 N. 17th St., Philadelphia, Pa., at \$4200 for feed water heaters; Superheater Co., 17 E. 52nd St., N. Y., at \$6970 for superheaters; Diamond Power and Specialty Co., 10340 Oakland Ave., Detroit, Mich., \$2,000 for soot blowers; Bailey Meter Co., 1032 Ivanhoe Rd., Cleveland, O., at \$1800 for feed water regulators and boiler meters; American Engineering Co., 244 Armingo Ave., Philadelphia, Pa., for damper regulators; Allen-Sherman-Hoff Co., Lewis Bldg., Philadelphia, Pa., at \$2000 for ash hoppers. 3-20

Okla., Oklahoma City—Oklahoma Gas & Electric Co., begin work soon on 66 kv. distribution power loop around city with necessary switching stations.

Tennessee—American Utilities Co., Inc., J. Elliott Hall, Pres., 17 S. High St., Columbus, O., announced that its subsidiary Tennessee Electric Co., contemplates extensive improvements to properties in Crockett County; rebuild electric light and power distribution system at Alamo; build transmission line from Alamo to Maury City, 6 miles, line will be insulated for and capable of carrying 22,000 volts; also plans improvements to property at Crockett Mills; will expend about \$20,000 on transmission and distribution system in Crockett County within 60 days; if company decides to discontinue purchase of power at Maury City and construct generating station at Alamo, investment will be \$50,000; acquired outstanding capital stock at Gibson Light & Power Co., Gibson Light & Power Co., Gibson, plans improvements to property. 3-27

Tex., Austin—Fargo Engineering Co., Consult. Engrs., 147 S. Mechanic St., Jackson, Mich., advises work on proposed hydroelectric development on Colorado River above Austin, for Emery, Peck & Rockwood Development Corp., Seguin, is of a preliminary nature; no contract let nor any bids asked; geological investigation of site of proposed reservoir dam near Burnet is being made, diamond drill borings being under way at present time; no actual construction is contemplated on this project in immediate future although it is expected work can be started some time during summer.

Va., Front Royal—Town, votes April 29 on authorizing call for bids for sale hydroelectric plant.

### Foundry and Machine Plants

Ala., Sheffield—William S. Hatch advises regarding recent report \$350,000 foundry and machine shop would locate in city: "The matter has been dropped."

D. C., Washington—Bureau of Yards and Docks, Navy Dept., Washington, D. C., let contract to Ira T. Brant, 944 14th St. S. E., Washington, at \$35,740, for extension of boilermakers' shop building, navy yard. 3-20

Ky., Paducah—Follis Clutch Pedal Gear Co., capital \$25,000, incorporated; Edwin J. Paxton, 1409 Broadway.

Okl., Oklahoma City—Oklahoma Boiler Safety Device Equipment Co. increasing capital \$50,000 to \$300,000.

Okl., Seminole—Oklmulgee Gas Engine Co., Fred Korp., Pres. and Gen. Mgr., Okmulgee, rebuilds of gas engines, erecting branch shop; 40 x 80 ft.

Va., Danville—Danville Welding Co., Inc., capital \$25,000, chartered; Charles M. Wood.

Va., Richmond—Davis Compression Brake Corp., capital \$25,000, incorporated; J. Dause Davis, 3600 Monument Ave.

### Garages and Filling Stations

Ark., DeQueen—Runyan-Parrish Chevrolet Co., incorporated; E. D. Parish.

Ark., Fayetteville—Carrington Oil Co. erect garage, E. Mountain St., at once; 80x102 ft.

Ark., Fort Smith—Phillips Petroleum Co., Bartlesville, Okla., acquired Beard Oil Co., operating 11 service stations, 50 retail outlets and warehouse facilities in Fort Smith and immediate vicinity.

Ark., Hot Springs—Firestone Tire & Rubber Co., Akron, Ohio, and 708 Linden Ave., Memphis, Tenn., erecting 1-stop service station; 1 story, basement, 113 x 70 ft., brick, cone, cone, floors, comp. roof; \$36,000 without equipment; J. D. Brock, Gen. Contr., Box 802, Hot Springs; Thompson, Sanders & Ginochio, Archt., Hall Bldg., Little Rock. 3-6

Ark., Osceola—F. P. Travis let contract to H. A. Lesmeister, Jonesboro, for \$10,000 filling station; brick veneer, conc., 1 story, comp. shingle roof, conc. floors and drives, concrete foundations; Magnolia Petroleum Co., Lessee.

Ky., Lexington—Patrick Sharkey plans filling station, Leestown Rd.

Ky., Louisville—Louisville Taxicab & Transfer Co., Ninth and Liberty St., let contract to J. F. Russell & Co., Brook & Bloom Sta., for \$125,000 garage, Ninth and Liberty St.; started construction; D. X. Murphy & Bro., Archt., Louisville Trust Bldg. 3-6

Ky., Louisville—Boone, Bergenroth & Miles Motor Co., capital \$25,000, incorporated; L. J. Bergenroth, 3732 W. Broadway.

La., Lake Charles—Moss & Watkins, Inc., Dodge dealers, having materials placed on ground for 2 all-steel, fireproof buildings, Ryan St., for used car dept.; 95x40 ft., for repairs and reconditioning used cars; open steel shed, 30x80 ft., with capacity of 40 cars, enclosed entirely with ornamental steel fence; construction to be started now and completed in few weeks.

La., Minden—Standard Chevrolet Co., Inc., chartered; C. O. Holland, Earl Long.

La., Rayne—Rayne Motors, Inc., capital \$20,000, chartered; Theodore Mier, Benton W. Mauboules.

Miss., Marks—Cox Motor Co., S. S. Cox, let contract to Dearoff & Dunn, for automobile building, Main St., adjoining present building; 50x100 ft., 5000 ft. floor space.

Mo., St. Louis—H. Nooter, 710 Clark St., and associate, let contract to J. N. McKelvey Construction Co., International Life Bldg., for auto sales room, 4137-39 Gravois St.; 1 story, 50x120 ft., brick, conc. foundation, steel sash, tar and gravel roof; now excavating; Aegeert & Bailey, Archt., Railway Exch. Bldg.

Mo., St. Louis—Lindsay Estate, 804 Chestnut St., let contract to Amber & Zimmerman, 22 S. 10th St., for altering 1 and 2 story garage, 4432-34 Olive St.; \$10,000.

N. C., Winston-Salem—Libes & Mathis have contract for filling station, Third St. and Claremont Ave., East Winston; stone; also for 2 4-room dwellings in same locality.

Okla., Tulsa—Standard Motor Service Corp., capital \$10,000, incorporated; Alfred Armbruster, 505 S. Utica St.

S. C., Florence—Texas Co., 17 Battery Place, New York, erect \$20,000 filling station. Tex., Dallas—H. L. Lynch, Inc., 3317 Drexel Dr., leased 3-story building, Elm St. and Jefferson Ave.; expend \$10,000 remodeling for garage and filling station.

Tex., Dallas—Continental Petroleum Corp., Ponca City, Okla., reported, expend \$500,000 erecting 7 filling stations and bulk distributing plant; ultimately expend \$1,000,000 in city; construction to start at once; Holland-Martin Oil Co., Albert Martin, Dallas and Fort Worth, will represent company locally.

Tex., Falfurrias—Falfurrias Motor Co., capital \$20,000, incorporated; H. T. Collins, A. Foster.

Tex., George West—T. F. Nance soon start erecting garage, Houston St. and State Hwy. No. 9.

Tex., Harrisburg—Hood & Hughes leased filling station, 427 Broadway.

Tex., Kingsville—Gulf Coast Motor Co., capital \$100,000, incorporated; H. T. Collins, A. Foster.

Tex., Marshall—Humble Oil & Refining Co., Humble Bldg., Houston, let contract to Rabe Wilson, 1503 Franklin St., Waco, for \$20,000 service station, E. Grand Ave. and N. Bolivar St.; 36x17 ft., brick, stucco; install grease and wash rack; private plans.

Tex., Paris—Magnolia Oil Co. let contract to H. L. Bean for service station, N. Main and Cherry Sts.

Tex., Wharton—Dodge Motor Co. started work on foundation for \$20,000 building; 1 story, hollow tile and stucco, plate glass front; C. E. Joplin, Gen. Contr.

Va., Norton—Frazier Bros., Inc., capital \$20,000, chartered; R. L. Frazier.

Va., Portsmouth—F. W. Hudson, Inc., capital \$50,000, chartered; F. W. Hudson, 314 Maury Pl., automobiles.

Va., Richlands—Walker Chevrolet Sales Co. placing materials on ground for garage.

Va., Suffolk—John R. Covington and Beatrice Saunders acquired large brick garage, N. Main St., for Buick sales and service, public storage, repairs, bus terminal.

W. Va., Wheeling—Twelfth Street Garage Co., 81 12th St., acquired site, 1120 Eoff St., and secured options on adjoining property; reported, erect large addition. 3-6-29

### Gas and Oil Enterprises

Ark., Dardanelle—Arkansas Natural Gas Corp., Ardis Bldg., Shreveport, La., reported, has gas franchise, subject to vote 3-27

Ga., Augusta—Atlantic Refining Co., construct \$14,000 foundation and building for glass plant at Glass Factory Alley.

Ky., Ashland—Browning Oil & Gas Co., capital \$50,000, incorporated; Iley B. and David Browning.

Ky., Paducah—Standard Oil Co., 4th St., reported, acquired tract bordering on Tennessee River; establish rail and river terminal.

Ky., Paducah—Specification Motor Oil Co., capital \$150,000, incorporated; Roscoe Reed, 2212 Jefferson St.

La., Covington—Washington-St. Tammany Drilling Corp., capital \$25,000, incorporated; S. D. Bulloch, Covington; Delos Pasman, Franklinton.

La., Monroe—Lyons Gas Co., reported, received stock interest in Austin-Jordan Oil & Gas Co., J. T. Austin, Pres., 403 Jackson St., Monroe, in return for development of 3500 acres west of Ouachita River, south of D'Arbonne bayou; United Carbon Co., Union Trust Bldg., Charleston, W. Va., reported, take specified amount of gas output.

La., Shreveport—Arkansas Fuel Oil Co., subsidiary of Arkansas Natural Gas Co., Ardis Bldg., reported, plans erection of casinghead gasoline plant; acquired 827 acres of leases and 5 producing wells with average of 1000 bbls. daily from Muslow Oil Co.

La., Shreveport—Shreveport-El Dorado Pipe Line Co., Slattery Bldg., reported, plans expansion pipe lines and other facilities; disposed of \$1,000,000 bonds.

N. C., Gastonia—Diamond Oil Co., capital \$100,000, incorporated; George F. Henry, R. O. Crawford.

Oklahoma—Indian Territory Illuminating Oil Co., Bartlesville, amended charter of authorize issuance of 5,000,000 shares of Class A common stock without par value and 9,500,000 shares of Class B stock without par value. 2-13

Oklahoma—Amerada Corp., 65 Broadway, N. Y., advises that report of merger between Standard Oil Co. of Kansas and Amerada Corp. is entirely without foundation. 4-3

Okla., Mangum—Babb Oil Co., capital \$25,000, incorporated; S. & F. and Ray K. Babb.

Oklahoma, Oklahoma City—Oils Incorporated, chartered; R. Y. Walker, 605 West 18th St., Oklahoma City.

Oklahoma, Oklahoma City—Indian Territory Illuminating Oil Co., Bartlesville, reported plans building additional natural gas extraction plants in Oklahoma City field. 2-13

N. C., Chapel Hill—Durham Gas Co., Durham, plans extending high pressure gas mains to Chapel Hill; expend \$100,000. 2-20

N. C., Mount Airy—Southern Public Utilities Co., 420 S. Church St., Charlotte, reported, negotiating for gas franchise; install gas plant.

N. C., Wilmington—Ocean Oil Corp., capital \$100,000, incorporated; F. H. and Kenneth R. Jones, II.

Oklahoma—Texas-Empire Co., Bartlesville, announced plans for building 8 pump stations for supplementing 11 pump stations now in operation along trunk line, from Lima, Okla., to Chicago, refinery; booster stations will be at Sand Springs and Cheyenne, Okla.; Sheldon, Cole Camp and Mexico, Mo.; either station at Sheldon or Mexico may be equipped with oil burning engines.

Oklahoma, Okmulgee—Barnsdall Refining Co., 120 Broadway, N. Y., reported, let contract to M. W. Kellogg Co., 7 Dey St., N. Y., for installing Cross A cracking unit; plan enlargement of boiler house. 3-13

S. C., Anderson—Harbin-Major Co., incorporated; Joe H. Harbin, John P. Major.

Texas—Pure Van Pipe Line Co., subsidiary of Pure Oil Co., Goodhue Bldg., Beaumont, reported let contract to Copperweld Steel Co., Glassport, Pa., for 375 mile of telephone wire for installation in Van Texas oil field. 3-27

Texas—Insull, Son & Co., Inc., 20 N. Wacker Drive, Chicago, Ill., reported, completed preliminary negotiations for 950-mile pipe line from Texas Panhandle District to Chicago area; Henry L. Doherty & Co., 60 Wall St., New York, affiliated with Cities Service Co., reported, will have charge of construction; estimated cost of line \$100,000. 3-6-29

Tex., Dallas—See Garages and Filling Stations.

Tex., Houston—Humphreys Corp., Esperon Bldg., reported, construct pipe line from Barbers Hill to Lynchburg on Houston ship channel; has site for tank farm; applied to Port Commsn. for permit to construct 1000 ft. dock on ship channel, cost \$300,000.

Tex., Port Arthur—Gulf Pipe Line Co., Frick Annex, Pittsburgh, Pa., reported, expend \$100,000 for pipe line from Hankamer oil fields, Liberty County, to South Lake, 22 miles; make connection with main line.

Tex., Fort Worth—Chapman Pipe Line Co., capital \$25,000, incorporated; R. T. Cowan, 1808 Clover Lane.

Tex., Houston—Strang Petroleum Corp., capital \$100,000, incorporated; Carl R. Haas, 1312 Columbus St.

Tex., Wichita Falls—Duke Oil Corp., capital \$125,000, incorporated; W. R. Duke, Perkins-Snider Bldg.

West Virginia—Bylesby Engineering and Management Corp., 231 S. LaSalle St., Chicago, Ill., advises Standard Gas & Electric Co., has not entered into any new combine to lease or own additional gas rights in western Pennsylvania and West Virginia; reports in which the Standard Gas & Electric Co., is mentioned are not authentic. 3-27

W. Va., Clarksburg—Hope Natural Gas Co., William Penn Way at Sixth St., Pittsburgh, Pa., advises that approximate cost of the new boiler plant for Hastings station is \$405,000; Babcock & Wilcox Co., 85 Liberty St., New York, contractors for 3 boilers each 1285 h.p. Sterling type; Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., for 9 stokers; Alphonse Custodis Chinnery Construction Co., 95 Nassau St., New York, for 274 ft. cone stack; plant is not new compressor station but additional boiler plant to handle coal and ashes with Stephens-Adamson Co.'s automatic equipment. 1-9

Va., Norfolk—City Gas Co., 208 E. Plume St., reported, expend \$50,000 for extension of lines and plant improvements; construct gas mains across river at Campostella Bridge to supplement service to Berkley, also extend gas main down Bayview Blvd. 3-27

Va., Portsmouth—Portsmouth Gas Co., 512 High St., reported, let contract to Chicago Bridge & Iron Works, Chicago, for Horton gas storage holder on Green St.; storage capacity of 100,000 cu. ft. gas.

Va., Richmond—American Oil Co., American Bldg., Baltimore, Md., reported, acquired bulk plant, and 4 service stations of C. D. Jenkins Oil Co.

Va., Roanoke—Standard Oil Co., 1007 Kimball Ave., N. E., install 60,000 gal. storage tank on Kimball Ave.

W. Va., Hamlin—Conley Gas Co., capital \$25,000, incorporated; B. H. Adkins, B. B. Jayna.

### Ice and Cold-Storage Plants

Ark., DeWitt—O. K. Ice Co., incorporated; G. R. Holloway.

Miss., Carrollton—L. S. Journey has contract for deep well; A. S. Turner has contract for remodeling building occupied by Spencer-McCain Chevrolet Co., and additional building for ice plant; install modern machinery.



## CONSTRUCTION DEPARTMENT

## Manufacturers Record

Ark., McGehee—Sam Desent let contract to M. A. Thompson, Monticello, for building, S. Front St. south of Pine St.; 32-ft., brick and plate glass front; to be complete May 15; to be occupied by Stuart Printing Co., 115 S. Front St., and McGehee Times.

Ark., Ozark—Kaylor Cheese Co., incorporated; Vessie Kaylor.

Ark., Paragould—Goodwin Poultry Co., W. G. Johns, Local Mgr., erecting \$12,000 headquarters building, S. Second St. and W. Kingshighway; 116x48 ft., garage 36x48 ft.; concrete foundation work completed; to be completed about June 1; W. W. Brannon, Paragould, in charge of carpentry work; J. W. Lucas, in charge of brick laying.

Ga., Albany—Standard Baking Co., M. O. Biford, Pres., erecting \$50,000 bakery; 60x120 ft.

Ky., Ashland—Evans Bakery, Inc., capital \$25,000, chartered; John Evans, Harry A. Judd.

Ky., Horse Cave—Burley Warehouse Co., H. L. Patton, Secy. and Mgr., erect large wareroom for tobacco.

Ky., Louisville—Kentucky Varnish Co., incorporated; Clifford Lussky, 1706 Windsor Pl., John Bernier.

Ky., Louisville—National Humidity Reduction Co., capital \$100,000, incorporated; Karl P. Boehmickie, 626 Lindell St.

Ky., Middlesboro—Anderson Indian Medicine Co., capital \$15,000, incorporated; Olive Sprague, May Hart.

La., Crowley—Dr. Pepper Crowley Bottling Co., Inc., capital \$10,000, chartered; Z. W. Hillard, Lake Charles; W. B. Hillard, Crowley.

La., DeRidder—DeRidder Steam Laundry, G. W. Cline, Sr., and G. W. Cline, Jr., let contract to J. Y. Dempsey, DeRidder, for remodeling recently acquired Marcello-Manzano Bldg., for addition to laundry; install new machinery.

La., Lake Charles—Dr. Pepper L. C. Bottling Co., Inc., chartered; Z. W. Hillard.

La., New Orleans—Louisiana Fur Mfg. Co., Inc., capital \$75,000, chartered; A. L. Patorac, 915 Royal St.

La., New Orleans—D & W Paper Co., capital \$150,000, chartered; Samuel H. Marcuse, 2731 Napoleon St.

La., Slidell—Canouette Shipbuilding Co., A. D. Canouette, Pres., construct \$100,000 dry dock at once.

Md., Baltimore—John H. Ferguson, 1918 Harford Ave., start constructing \$225,000 garment plant, Elm Ave. and 32nd St., Hampden section, about May 10; 2½-story, brick, 72,000 sq. ft. floor space; to be operated by undisclosed interests; Herman F. Doebleman, Engr., 516 N. Charles St.

Md., Baltimore—Hinde & Dauch Paper Co., J. H. Macleod, V-Pres., Sandusky, Ohio, advises regarding report would establish plant here: "We have purchased the site on which we will build a new plant, but the details are still in a very preliminary stage."

Miss., Greenwood—Columbus Ice Cream & Creamery Co., D. Cox, Columbus, acquired pasteurizing plant of Morgan Dairy Co.

Miss., Meridian—Lauderdale Dairies, Inc., M. E. Nest, Pres., Biloxi, newly organized, distributing plans for bids on \$18,000 first unit of milk plant; acquired 4 lots, Fifth St. and 31st Ave. and started preparing ground; 1 story, rein. conc., brick, steel, 60x60; provide for delivery of milk.

Mo., Kansas City—American & Venetian Ceramic Co., Incorporated; A. B. Colfray, 1404 W. 61st Terrace, J. M. Slater; tiles, pottery, earthenware, chinaware, ceramic ware, etc.

Mo., Kansas City—Alpine Silver Fox & Mink Ranch, Inc., chartered; Walter R. Schmid, 1137 E. 76th St.

Mo., Springfield—Frank B. Smith Laundry Co., Inc., 512 Boonville St., let contract to W. W. Johnson, 301½ College St., for remodeling laundry; \$15,000; Eugene F. Johnson, Archt., McDaniel Bldg.

Mo., St. Louis—E. B. Hill Bottle & Supply Co., Inc., 2700 S. Third St., capital \$15,000, chartered; E. B. Hill.

Mo., St. Louis—Holsum Ice Cream Co., 5713-15 Delmar St., capital \$18,760, incorporated; Paul Lam, A. Donald Cook.

Mo., University City—Sta-Krisp Chip Co., Incorporated; Charles J. Hartwein, Anna S. Simpson; potato chips, etc.

N. C., Lenoir—Model Laundry formed by merger of Vogue Laundry and Lenoir Laundry.

N. C., Waynesville—Thomas Seawall acquired Waynesville Mountaineer, newspaper.

N. C., Winston-Salem—Investment Builders Co., capital \$100,000, incorporated; F. F. Steele, G. H. Cox; building contractors.

Ola., McAlester—McAlester Democrat, Inc., chartered; O. S. Stanton, Hiram Impson.

Ola., Oklahoma City—Ideal Laundry, Inc., 116 S. Dewey St., capital \$15,000, chartered; W. J. Enochs.

Tenn., Chattanooga—Linde Air Products Co. and Prest-O-Lite Co., Inc., subsidiaries of Union Carbide & Carbon Corp., all 30 E. 42nd St., New York, soon start erecting two plants, 23rd St., at Central of Georgia Ry. crossing; rein. conc., brick, steel, ornamental; beautify grounds.

Tenn., Knoxville—Tennessee Insurance Co., incorporated; Edward R. Lutz, Kingston Park.

Tenn., Memphis—Consolidated Contractors, 658 East St., formed by merger of B. E. Buffalo & Co., Estes Williams Construction Co., H. J. Gilbertson Construction Co. and Charles L. Stehle & Co.

Tenn., Nashville—Jarman Shoe Co., Gallatin Ave., C. P. Clark, V-Pres., erect plant to double present capacity.

Tenn., Old Hickory—Virginia Bridge & Iron Co., Roanoke, Va., has contract for 1000 tons struc. steel for addition to plant of Du Pont Cellophane Co., Inc., The Park Ave. Bldg., New York, subsidiary of E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.; Du Pont Engineering Co., Gen. Contr., Wilmington, Del.

Tex., Beaumont—Metzger Dairies, Holmes St. Rd., Dallas, establishing plant.

Tex., Dallas—S. & C. Amusement Co., incorporated; Eph Charnsky, 375 Wendelenken St.

Tex., Dallas—Otey Envelope Co., capital \$50,000, incorporated; Paul A. Otey, 3317 St. Johns Dr.

Tex., Dallas—J. M. Colville & Son, capital \$60,000, incorporated; W. S. Henson, 5247 Ridgeland St., printing and publishing.

Tex., Devers—Devers Implement Co., capital \$25,000, chartered; E. W. Boyt, J. M. Rich.

Tex., Houston—National Biscuit Co., 19 Chenevert St., acquired 3-story building adjoining plant; install machinery and equipment for biscuit plant.

Tex., Mercedes—Rio Grande Construction Co., Inc., chartered; John Cuiper, James H. Anderson.

Tex., San Antonio—Jasmine Garment Factory, Inc., incorporated; Louis Jasmine, 102 Baity Court.

Tex., Waco—Fisher's Hot Shop Bakery, Inc., capital \$30,000, chartered; Walter Fisher.

Tex., Wichita Falls—Tuf-Nut Garment Mfg. Co. of Texas, 505 Travis St., changing name to Western Garment Mfg. Co.

Va., Bristol—Darter Creameries, Inc., capital \$50,000, chartered; O. L. Darter.

Va., Buchanan—N. B. Hafleigh & Sons, N. B. Hafleigh, 710 Medany St., Philadelphia, Pa., plans acquiring property of Continental Can Co.; to be remodeled for button plant.

Va., Lynchburg—The News and The Advance, acquired site, Ninth and Church St. for newspaper plant.

Va., McKinney—North American Button Mfg. Co., Inc., Howard and Palmer St., Philadelphia, Pa., establish button plant; McKinney Executive Committee consisting of C. G. Zehmer, C. W. Doyle and C. F. Baskerville, all McKinney, will erect suitable building of approx. 10,000 sq. ft. floor space; started foundation work; first unit to employ 50 to 60; may move entire equipment to McKinney; to be in operation within 90 to 120 days; later erect additional unit and employ 150.

Va., Richmond—James River Paper Products, Inc., A. B. Collins, V-Pres., 306 S. Sixth St., successor to Caukenell Bag Corp., installing parts to sack machines to manufacture duplex or double-wall sacks and adding certain semi-automatic devices for hand made specialty department; probably make several improvements and additions to equipment within 12 months.

Va., Roanoke—Reed-Draper, Inc., 1007 Jefferson St., W. C. Draper, Pres., changing name to Rainbow Cleaners & Dyers of Roanoke, Inc.

Va., Suffolk—H. J. Bowen & Co., Inc., capital \$25,000, chartered; H. J. Bowen; clothing.

Va., Winchester—Lee Baking Co., George G. Barber, Pres., Atlanta, Ga., let contract to John F. Rodman Construction Co., Winchester, for rebuilding burned bakery.

Va., Wytheville—Southwest Building Corp., capital \$25,000, incorporated; P. H. Zirkle, Christiansburg.

W. Va., Grafton—Grafton Newspaper Publishing Co., incorporated; J. Monroe Boyer, Morgantown; C. F. Schroeder, Jr., Grafton.

W. Va., Martinsburg—National Fruit Product Co., Woodward Bldg., Washington, D. C., acquired vinegar plant, with 600,000 gal. annual capacity, of Cumberland Valley Fruit Product Co.; reported, will establish large evaporating plant.

W. Va., Weirton—Panhandle Publishing Co., capital \$10,000, incorporated; James J. Weir, John A. Jones.

## Motor Bus Lines and Terminals

D. C., Washington—People's Rapid Transit Co., owned by Pennsylvania R. R. and Philadelphia Rapid Transit Co., both Philadelphia, Pa., install 20 buses to fleet operated on New York-Philadelphia-Washington route; accommodate 33; to be in operation about May 30.

Ga., Athens—Georgia Power Co., Atlanta, granted franchise by City Council to operate bus service in place of trolleys in city.

Tenn., Knoxville—Motor Express, Inc., being formed by merger of Truck Transfer Co., Bristol, and Thomas Transfer Co., Knoxville; application placed with Railroad and Public Utilities Comsn., Nashville; carry freight from Bristol to Chattanooga, Bristol to Erwin, Bristol to Elizabethton and Knoxville to Newport.

## Railways

Ala., Mobile—Gulf, Mobile & Northern R. R. Co., Mgr., Pur. and Stores, reported, ordered 250 box cars from American Car & Foundry Co., 30 Church St., New York.

Ala., Mobile—Gulf, Mobile & Northern R. R. Co., H. E. Warren, Mgr., Pur. and Stores, advises regarding reports that company ordered 250 box cars from American Car & Foundry Co., New York, report is erroneous.

Ark., Springhill—Louisiana & Arkansas Ry. Company, S. Atkinson, Senior V-Pres., Shreveport, advises regarding report that company would construct line, Springhill to Cartersville: "We do not have under consideration the construction of any new line."

Ky., Louisville—Louisville & Nashville R. R. Co., A. T. Shanks, Pur. Agt., ordered 6 4-8-2 type locomotives from Baldwin Locomotive Works, Philadelphia, Pa.

La., New Orleans—Louisiana & Arkansas Ry. Co., E. F. Salisbury, Ch. Engr., Minden, reported, expend \$2,000,000 on trackage improvements between Baton Rouge and New Orleans; deal closed with Missouri Pacific R. R. Co., E. A. Hadley, Ch. Engr., St. Louis, Mo., under which latter will use L. & A. tracks and terminals between the two points; completion, involving 80 mi. trackage, expected within 3 years.

Missouri—Illinois Central System, J. J. Bennett, Pur. Agt., Chicago, Ill., reported, will expend \$10,000,000 for equipment in 1930, including \$1,000,000 for orders from 1929 still unfulfilled; soon ask bids on 2330 units, aggregate cost about \$9,000,000, including 1000 automobile furniture box cars, 1000 open top cars, 200 flat cars, 15 mail, baggage and express cars, 15 passenger cars, 20 electric suburban cars, 65 cabooses, 2 rail motor cars, and 4 dining cars.

N. C., Charlotte—Durham & Southern Ry. Co., E. Thomason, Pres. and Gen. Mgr., ordered 2 locomotives from Baldwin Locomotive Works, Philadelphia, Pa.

Oklahoma—St. Louis-San Francisco Ry., F. G. Jonah, Ch. Engr., St. Louis, Mo., let contract to Interstate Commerce Comsn., Washington, for permission to construct line extending from northern terminus of Shamrock branch, Creek County, northward to refinery of Tidal Refining Co., near Drumright, approx. 2.95 mi.

Oklahoma—Oklahoma City—St. Louis-San Francisco Ry., F. G. Jonah, Ch. Engr., St. Louis, Mo., let contract to Reed & Lowe, Tulsa, for depressing tracks in city; begin constructing new freight lines on north side of present tracks from Denver Ave. to east of proposed location of union station.

Oklahoma—Oklahoma City—St. Louis-San Francisco Ry., F. G. Jonah, Ch. Engr., St. Louis, Mo., let contract to Reid & Lowe, 2109 N. 14th St., Birmingham, Ala., for depressing tracks in city; begin constructing new freight lines on north side of present tracks from Denver Ave. to east of proposed location of union station.

Texas—Rock Island Lines, F. D. Reed, Gen. Pur. Agt., Chicago, Ill., advises, ordered 5 70-ft. steel baggage cars from American Car & Foundry Co., 30 Church St., New York, to be built at Jeffersonville (Ind.) plant for delivery during third quarter 1930; equipped with 6-wheel Commonwealth trucks. 4-3

Tex., Grand Saline—E. F. Mitchell, Ch. Engr., Texas & Pacific Ry. Co., Dallas, advises regarding extension of Texas Short Line Ry., Grand Saline to Van: "Extension will be approx. 11 mi.; grading amounts to about 160,000 cu. yd. and will be done under contract by Gifford-Hill & Co., Inc., N. Texas Bldg., Dallas; track laying will be done by railway forces." 4-3

Va., Petersburg—Seaboard Air Line Ry. Co., W. D. Faucette, Ch. Engr., Savannah, Ga., reported, start \$1,000,000 improvement project in city at once; straighten tracks through city and construct bridge across Appomattox River.

### Roads, Streets and Paving

In connection with LAND DEVELOPMENT large sums are expended for roads, streets, paving and sidewalks. Details will be found under that classification.

#### Proposed Construction

Ala., Millers Ferry—State Highway Comsn., Montgomery, receives bids May 6 to grade, drain and surface approaches to river bridge at Millers Ferry, Wilcox County. 32,500 cu. yd. excavation; R. D. Jourdan, State Highway Engr. 3-13

Ala., Montgomery—City, W. A. Gunter, Mayor, considering paving Monte zuma road, from Fairview to Edgemont Ave.; J. M. Garrett, City Engr.

Ala., Tuscaloosa—City receives bids April 22 for paving 5 blocks of streets, cost about \$15,000.

Arkansas—State Highway Comsn., Little Rock, receives bids April 17 for 2 roads and 9 bridges: Jefferson and Lincoln Counties—9 mi. conc., Pine Bluff-Grady road, State Highway No. 65, from point west of Moscow through Grady, 9,300 cu. yd. borrow, 98,236 sq. yd. grading, sub-grade and shoulders, 98,316 sq. yd. conc. pavement; Lonoke County—13½ mi. grading, draining, State Highway No. 70, from intersection of State Highways No. 70 and 31, south of Lonoke to point east of Carlisle at Lonoke-Prairie County line, 179,908 cu. yd. excavation and borrow, 50,286 lb. rein. steel; Lonoke and White Counties—8 bridges, about 524 lin. ft. rein. conc. deck girder, on Pulaski County line and Ward road, one bridge 200 ft. north of Pulaski-Lonoke County line, over Glade Branch, one at Lonoke-White County line, over Cypress Bayou, others at intervals on intervening 10½ mi. highway, 11,358 lin. ft. untreed timber piling, 309,303 lb. rein. steel; White County—158-ft. rein. conc. bridge over Overflow Creek, Bald Knob-Judsonia road, State Highway No. 67, deck girder continuous spans type, about 2½ mi. south of Bald Knob, 89,570 lb. rein. steel; C. S. Christian, State Highway Engr.

Ark., De Valls Bluff—State Highway Comsn., Little Rock, receives bids April 17 for 6½ mi. grading, draining, Highway No. 70, Lonoke County Line—Hazen road, from point west of Hazen to intersection of Highways 70 and 11 in Hazen, 84,321 cu. yd. excavation and borrow, 31,078 lb. rein. steel; C. S. Christian, State Highway Engr. 3-13

Ark., Fort Smith—City, Fagan Bourland, Mayor, plans paving Thirty-third and Thirty-fourth St. in Dist. No. 44; W. L. Winters, Engr., Merchants National Bank Bldg.

Ark., Monette—City, John Hancock, Mayor, plans starting soon to gravel Edmundton, Drew and Nance St.

D. C., Washington—Dist. Comms. receive bids April 16 to repair cement conc. sidewalks, surface treat gravel streets and roads, with bit. macad.; furnish bit. conc. mixture for cold patching.

Fla., Jacksonville—City Comsn., M. W. Bishop, Sec., receives bids April 21 for 13,786 sq. yd. 7-in. conc. paving, 991 sq. yd. 6-in. conc. paving, 9,237 sq. yd. 2-in. asphaltic conc. on 6-in. conc. base, 6,547 sq. yd. old brick on 8-in. limerock base, on various streets in Ordinances No. U-68, U-42, T-163 and T-239.

Fla., St. Petersburg—See Miscellaneous Construction.

Fla., Tampa—City, D. B. McKay, Mayor, plans expending about \$5,978 for public im-

provements, including Bayshore Dr. extension between Platt St. bridge and Davis Island, and for sewerage.

Georgia—State Highway Bd. of Georgia, J. W. Barnett, Chmn., East Point, will let contract in April for section of Waycross-Brunswick road, from Ware County line to Nahanta, Brantley County; second section includes road from Nahanta to Atkinson or Waynesville; final contract includes road between Waynesville to Coastal Highway, Glynn County; W. R. Neel, State Highway Engr.

Ga., Atlanta—Fulton County Comms., W. B. Stewart, Chmn., authorized paving West Peachtree St. with conc. from Sixth St. to Peachtree St., at Pershing Point. 1-9

Ga., Columbus—City Comsn., Henry B. Crawford, City Mgr., plans paving 4 streets, including Twenty-ninth and Sixteenth St., Forest and Seventeenth Ave.; paving Buena Vista road from Henry St. to city limits.

Ga., Rome—State Highway Bd., East Point, approved plans Floyd County Bd. of Revenue to pave both highways from Rome, Ga. to Alabama line; from Cave Springs to Alabama line; other route via Coosa; W. R. Neel, State Highway Engr.

Ga., Valdosta—State Highway Comsn., Atlanta, plans completing 16 mi. paving Route 38, Valdosta, Lowndes County, to Lanier County line; B. G. Lastinger, Clk., will let bids soon.

Kentucky—State Highway Dept., Frankfort, receives bids May 2 for 3 roads: Casey County—6.59 mi. grade, drain, Liberty-Somerset road, from point south of Yosemite, near Pine Grove School to point near Bethel Ridge; Gallatin-Boone Counties—15.2 mi. surface, Cincinnati-Louisville road, from Warsaw to conc. pavement north of Beaver Lick; Oldham-Henry-Trimble Counties—29.1 mi. surface, Louisville-Concinnati road, from Jefferson County line near Prospect to Bedford; H. D. Palmore, Ch. Engr.

Kentucky—State Highway Comsn., Frankfort, announces road letting scheduled for April 17 has been cancelled; personnel of Comsn. having been changed since advance notices were sent out. 3-6

Ky., Horse Cave—H. L. Patton and W. S. Carver, Horse Cave, promoting building 5 mi. of 60-ft. highway from end of Main St., Horse Cave, to Mammoth Cave National Park Area.

Louisiana—Louisiana Highway Comsn., Baton Rouge, received low bids for 9 roads and bridges: Rapides Parish—375 mi. emergency Sandy Bayou-Latanier Levee Highway, Cummins, Leathers & Martin, Alexandria; Tensas Parish—grading, draining, Winniboro-St. Joseph Highway, F. D. Harvey & Co., Jonesboro, \$53,275; Franklin Parish—surfacing Aldershot road (Meridale Farms), from end of conc. to Old Frederick road; 13 mi. conc., Mt. DeSales road (Meridale Farms), Orpington road, southwest; 23 mi. conc., East Drive (Arbutus), Linden Ave. to Sulphur Spring road; 18 mi. conc., Hazel Ave. (Landsdowne), from Hammond's Ferry road to Washington Ave.; 23 mi. conc., Fourth Ave. (Landsdowne), Hammond's Ferry road, to Washington Ave.; 15 mi. conc., Louisiana Ave. (Rosemont), Annapolis road, east; 15 mi. conc., Ohio Ave. (Baltimore Highlands) Annapolis road, east; Samuel A. Green, Roads Engr.

Miss., Clarksdale—City, R. E. Stratton, Jr., Clk., plans 4-ft. sidewalks on Sixth, Garfield, Grant and Lincoln St.

Miss., Houston—Town, R. F. Brand, Clk., receives bids April 25 for grading, draining, 45,750 sq. yd. cement conc. paving, and 34,100 lin. ft. conc. curb and gutter; C. N. Harrub Engineering Co., 705 Fourth and First National Bank Bldg., Nashville, Tenn.

Mo., Bonne Terre—City, Al Lundborg, Sec., plans receiving bids soon for \$25,000 grading and paving; Chas. A. Haskins, Engr., 824 Finance Bldg., Kansas City. 1-30

Mo., Rich Hill—City, Harold Hallam, Clk., plans expending \$35,000 to pave Park Ave., Park to Highway No. 71; W. B. Rollins Co., Constructing Engr., Railway Exchange Bldg., Kansas City.

Mo., Excelsior Springs—City receives bids April 14 for 6-in. Portland cement conc. paving 26-ft. wide, with marginal bar reinforcing; J. W. Shikels, Consld. Engr., 108 New York Life Bldg., Kansas City.

Mo., Mexico—City, J. H. Lane, Mayor, receives bids April 14 for 12,000 sq. yd. 6-in. rein. conc. paving, with integral curb, and 413 sq. yd. plain 6-in. conc. on 5 streets, including Craig, Jackson St.

La., Shreveport—City, S. G. Wolf, Sec. Treas., received low bid from Shreveport Paving Co. at \$2.83 per sq. yd. for paving Kenneth Ave. and at \$2.69 per sq. yd. for paving Wichita St. with natural rock asphalt; H. E. Barnes, Engr.

La., Shreveport—Caddo Parish Police Jury, plans improving and graveling about 40 mi. public roads in parish, including Lakeshore Drive-Mooringsport road, etc.; estimated cost \$250,000; J. T. Bullen, Parish Engr.

La., Slidell—City plans widening Front St., Old Spanish Trail, through city, 18 to 26 ft., subsurface drainage, conc. curb; cost about \$10,000.

Maryland—State Roads Comsn., Baltimore, receives low bids for 5 roads: Anne Arundel County—9.92 mi. conc. shoulders, Defense Highway, Camp Parole to Priest Bridge, G. & L. Construction Co., Overlea, Md., \$53,196; Cecil County—3.03 mi. road from Kortner Ketch to Liberty Grove, Geo. A. Atkinson, Port Deposit, \$66,270; Montgomery County—2.47 mi. conc., Laytonsville-Olney road, from end of Cont. M-67 to Cont. M-67 to Cont. M-101, M. J. Grove Lime Co., Marine Bank Bldg., Lime Kiln, \$47,204; Prince George's County—4.08 mi. gravel, from end of Cont. P-69, near Croome to Taylor, Jarboe & Houghton, Mechanicsville, \$34,749; Worcester County—99 mi. conc. with slag shoulders, Pocomoke-Cedar Hall road, end of Cont. Wo-63 to Cedar Hall, Hannemann-Burroughs Co., Salisbury, \$21,379; G. Clinton Uhl, Chmn. 3-27

Maryland—State Roads Comsn., Baltimore, receives bids April 15 for 5 roads: Carroll County—2.5 mi. conc., from end of Cont. Cl-26, north of Taneytown, toward Pennsylvania State Line, Cont. Cl-12-54; Frederick County—1 mi. conc., from Woodsboro toward Libertytown, Cont. F-147-54; Queen Anne's County—1 mi. conc., from end Cont. Q-46, near Price, toward Bridgetown, Cont. Q-59-22; Talbot County—2.42 mi. conc., slag with conc. shoulders or penetration macad., from State Road near McDaniel toward Tilghman, Cont. T-32-22; 1.18 mi. conc., from bridge at Knapp Narrows, south through Tilghman, north toward McDaniel, Cont. T-33-24; G. Clinton Uhl, Chmn.

Md., Baltimore—Nathan L. Smith, Highways Engr., announces paving Hanover St., Cromwell to Winder St., lower section of viaduct over tracks of B. & O. R. R. and Western Maryland Ry. will start this week; P. Flanigan & Sons, Inc., contractors. 2-20

Md., Baltimore—City, Bd. of Awards, received low bid from Arundel Construction Co., 910 Trinity Ave., Baltimore, at about \$24,000 for paving alleys with 6-in. conc., 1-2 mix; Nathan L. Smith, Highways Engr.

Md., Towson—Baltimore County Comms., John R. Haut, Ch. Clk., receive bids April 15 to improve 7 roads in Group No. 3: 13 mi. conc. Aldershot road (Meridale Farms), from end of conc. to Old Frederick road; 13 mi. conc., Mt. DeSales road (Meridale Farms), Orpington road, southwest; 23 mi. conc., East Drive (Arbutus), Linden Ave. to Sulphur Spring road; 18 mi. conc., Hazel Ave. (Landsdowne), from Hammond's Ferry road to Washington Ave.; 23 mi. conc., Fourth Ave. (Landsdowne), Hammond's Ferry road, to Washington Ave.; 15 mi. conc., Louisiana Ave. (Rosemont), Annapolis road, east; 15 mi. conc., Ohio Ave. (Baltimore Highlands) Annapolis road, east; Samuel A. Green, Roads Engr.

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N. C., Brevard—State Highway Comsn., Raleigh, will start work, not later than July 1, on 2 highways in Transylvania County: Hard surface Highway No. 284, Brevard-Greenville, S. C. road, via Conestee Falls, Cedar Mountain, Ceasers Head, etc.; Highway No. 283, Rosman to Pickens, S. C.; plans starting another road about first of year; John D. Waldrop, Ch. Engr.

N. C., Elizabeth City—City considering sidewalks on Water and Walnut St.

N. C., Fayetteville—City, Bd. of Aldermen, considering expending \$68,000 for street improvement. See Financial News Columns.

Oklahoma—State Highway Comsn., Oklahoma City, receives bids April 15 for 3 roads: Cleveland and McClain Counties—4½ mi. 20-ft. pavement, State Highway No. 7 and 9, from end of pavement at Oklahoma County line to point south of New Castle Bridge; Kay County—4 mi. 18-ft. pavement, State Highway No. 11, end of present pavement to Grant County line; Ottawa and Delaware Counties—5 mi. 20-ft. pavement, U. S. Highway No. 66, Afton to junction on State Highway No. 25; A. R. Losh, State Highway Engr.

Okl., Cherokee—State Highway Comsn., Oklahoma City plans letting contract within next 30 days for 11 mi. grading, draining, U. S. Highway No. 64, Alfalfa County; A. R. Losh, Highway Engr.

South Carolina—State Highway Dept., Columbia, receives bids April 15 for 4 roads: Anderson County—paving approaches to overhead near Belton, 2,242 sq. yd. 8-6½-8-in. plain Portland cement conc. paving; paving gaps between Anderson and Williamson Counties, 3,000 lb. rein. steel; Greenville County—paving gap at overhead near Fountain Inn, 3,000 lb. rein. steel; paving gap at overhead near Greenville, 3,000 lb. rein. steel; Ben M. Sawyer, Ch. Highway Commr.

Tenn., Chattanooga—City, Roger Crox, Commr., received low bid from Gridley Construction Co., Daylight Bldg., Knoxville, at \$106,000 to grade Market St., Main St. to Alton Park Blvd.; W. H. Wilson, City Engr.

Tenn., Greenfield—City plans expending \$25,000 for street improvement. See Financial News Columns.

Tenn., Lenoir City—City, John Johnson, Chmn., Street Comsn., probably let contract in May to surface Grand St., Broadway to Southern tracks.

Tenn., Springfield—City, J. R. Adams, Clk., receives bids April 15 for grading, and 8,100 sq. yd. sheet asphalt paving, Boren and Willow St., cost \$25,000; Long & Co., Engrs., Bennie-Dillon Bldg., Nashville.

Texas—State Highway Comsn., Austin, receives bids April 22 and 23 for 4 roads: Caldwell County—3,251 mi. grading, draining, Highway No. 80, Luling to Precinct No. 3 Line 53,205 cu. yd. excavation, 119,056 lb. rein. steel; Don L. Hook, Res. Engr., Fentress; Grayson County—15.5 mi. grading, draining, Highway No. 42 and 73-A, Bells to Collin County line, 204,253 cu. yd. excavation, 181,644 lb. rein. steel; W. D. Dockery, Res. Engr.; Jackson County—2,555 mi. grading, conc. paving, Highway No. 12 across Lavaca and Navidad River bottoms, 18,841 cu. yd. excavation, 21,608 sq. yd. conc. pavement, 143,044 lb. rein. steel; D. K. Shepard, Res. Engr.; Brazos County—6,962 mi. grading, draining, conc. paving, large drainage structures, Highway No. 6, Bryan to Robertson County line, 102,513 cu. yd. excavation, 81,056 sq. yd. conc. pavement, 245,916 lb. rein. steel, for pavement, 26,259 lb. rein. steel for structure; C. C. Todd, Jr., Res. Engr.; Gibb Gilchrist, State Highway Engr.

Texas—State Highway Comsn., Austin, receives bids April 22 and 23 for 4 roads: Jones County—17,424 mi. double bit. surface treatment, Highway No. 92, Hamlin to intersection with Highway No. 30, south of Stamford, 14,955 cu. yd. broken stone, 184,633 sq. yd. double bit. surface treatment; J. W. Puckett, Res. Engr., Stamford; Wilbarger County—17,282 mi. grading, draining, Highway No. 23, from point north of Vernon to Red River, 201,501 cu. yd. excavation, 127,224 lb. rein. steel; John B. Nabor, Res. Engr.; Hale County—7,528 mi. rein. conc. Highway No. 28, Plainview to Floyd County line, 79,431 sq. yd. subgrade, 79,431 sq. yd. conc. pavement, 164,102 lb. rein. steel; H. R. Anderson, Res. Engr.; Gray County—7,386 mi. grading, draining, Highway No. 33, Carson County line to Pampa, 75,238 cu. yd. excavation, 8,907 lb. rein. steel; W. C. Bushfield, Res. Engr.; McLean; Gibb Gilchrist, State Highway Engr.

Texas—State Highway Comsn., Austin, receives bids April 22 for 13 roads: El Paso County—25.724 mi. single bit. surfact treatment, Highway No. 130, from point east of El Paso to Hudspeth County line, 284,147 sq. yd.; G. S. Finley, Div. Engr., Balmorhea; Limestone County—4.5 mi. single bit. surface treatment, Highway No. 14, Navasota River to Groesbeck, 42,252 sq. yd.; E. C. Woodward, Div. Engr.; Shelby County—9.5 mi. double bit. surface treatment, Highway No. 8, Centre to point south of Shelbyville, 100,320 sq. yd.; Edward F. Maddox, Div. Engr., Lubbock; Angelina County—15.19 mi. double bit. surface treatment, Highway No. 35, Lufkin to Polk County line, 142,583 sq. yd.; Edward F. Maddox, Div. Engr.; Eastland County—10.04 mi. double bit. surface treatment, Highway No. 67, Stephens County line to Eastland, 122,023 sq. yd.; W. J. Van London, Div. Engr., Abilene; Nolan County—7.82 mi. seal coat bit. surface treatment, Highway No. 70, Coke County line, north, 82,568 sq. yd.; W. J. Van London, Div. Engr.; Dickens County—17.72 mi. seal coat bit. surface treatment, Highways No. 18 and 53, from point north of Dickens to Crosby County line, 181,843; Joe H. Caldwell, Div. Engr., Lubbock; Panhandle County—14.49 mi. seal coat bit. surface treatment, Highway No. 117, Hutchinson County line, south, 153,014 sq. yd.; W. A. French, Div. Engr., Amarillo; Tarrant County—13.4 mi. seal coat bit. surface treatment, Highway No. 2, Fort Worth to Wise County line, 141,504 sq. yd.; 7.28 mi., Highway No. 1, Fort Worth, west, 76,876 sq. yd.; 8.24 mi. Highway No. 2-A, Benbrook to Parker County line, 77,346 sq. yd.; John Mead, Div. Mgr.; Johnson County—13.9 mi. seal coat bit. surface treatment, Highway No. 127, Burleson to Cleburne, 146,734 sq. yd.; 7.61 mi. double bit. surface treatment, Highway No. 127, connecting Highways No. 2 and No. 2-A in Burleson, 8,213 sq. yd.; John Mead, Div. Engr., Fort Worth; Gibb Gilchrist, State Highway Engr.

Tex., Abilene—Taylor County plans 23,367 mi. resurfacing, Highway No. 1, Abilene to Nolan County line, estimated cost \$29,000; W. J. Van London, Res. Engr.

Tex., Bastrop—Bastrop County plans surfacing with 2-in. gravel, with oil mix treatment, 6.2 mi. Highway No. 71, Colorado River to Alum Creek, estimated cost \$15,800.

Tex., Beaumont—State Highway Comsn., Austin, plans paving and improving 4.7 mi. College St. extension road, from Ave. D to Old Spanish Trail at Amelia; cost about \$250,000.

Tex., Childress—Childress County, W. B. Howard, Judge, plans 13,455 mi. rein. conc., Highway No. 5, Childress to Hall County line; S. D. Bacon, Res. Engr.

Tex., Corpus Christi—City, Theo. Koester, Sec., plans improving Antelope St., Broadway to Carrizo; Carancahua St., Leopard to Buffalo St.; Glenn R. Blackburn, City Engr.

Tex., Dallas—Dallas County Commsr. receives bids May 1 to rebuild Maple Ave. from Hawe's Ball Park to connection with Northeast Highway north and west of Bachman Dam.

Tex., Dallas—City, J. Waddy Tate, Mayor, received low bid from H. L. Cannady Co., Santa Fe Bldg., at \$2.21 per sq. yd. for paving 27 streets with 2-in. Willite topping on 6-in. gravel base; John M. Young, City Engr.

Tex., Edcouch—City, H. D. Minyard, Commr., receives bids soon on alternate types paving, 5 blocks Santa Rosa and Hill St., 30-40 ft. cost \$40,000.

Tex., George West—Live Oak County, C. B. Beard, Judge, plans grading, draining Mathie-Corpus Christi Highway, estimated cost \$50,000; W. H. Stribeck, Jr., Res. Engr.

Tex., Guthrie—King County, G. W. Gross, Judge, plans 15,354 mi. grading, draining, Highway No. 4, Guthrie to Stonewall County line; M. E. Savage, Res. Engr.

Tex., Houston—Harris County, Charles R. Haile, County Engr., making survey for about 20 mi. South Houston-La Porte and Westheimer roads; 12 mi. on South Houston-La Porte road; 8.8 mi. on Westheimer road; Norman Atkinson, County Judge.

Tex., Houston—Harris County, Norman Atkinson, County Judge, considering improving 13 roads, including Almeda, Humble, Katy road; Old Spanish Trail, etc.; Charles R. Haile, County Engr.

Tex., Houston—Harris County, Norman Atkinson, County Judge, completed plans for Almeda road paving from city limits of Houston to town of Almeda; preparing plans for underpass at Pierce Junction; plans improving Wallerville and Oats road, from McCarthy Ave. to Old Spanish Trail at point near County Home; lately noted voted bonds.

Tex., Kerrville—Kerr County considering road building. See Financial News Columns.

Tex., Paducah—Paducah County, James M. Whatley, Judge, plans 8,286 mi. rein. conc. surfacing, Highway No. 4, Sta. 35 plus 91 to Sta. 473 plus 40; M. E. Savage, Res. Engr.

Tex., Richmond—Fort Bend County, F. X. Joerger, Judge, plans 18.744 mi. grading, draining, rein. conc. paving, Highway No. 36, Rosenberg to Brazoria County line, estimated cost \$560,000; Bertram Hedick, Res. Engr.

Tex., San Antonio—City, C. M. Chambers, Mayor, plans expending over \$1,000,000 for street work. See Financial News Columns.

Tex., San Antonio—City, C. M. Chambers, Mayor, receives bids April 14, for paving South New Braunfels Ave. and Miller St.; I. Ewing, City Engr.

Tex., San Saba—City plans expending \$75,000 for street paving. See Financial News Columns.

Tex., Sudan—City plans street paving and sewer system. See Financial News Columns.

Tex., Tyler—Smith County plans widening shoulders and ditches, regrading, lengthening culverts, and laying double bit. surface treatment on 4.8 additional miles, Job No. M-10-B-4; estimated cost \$46,000; DeWitt C. Greer, Acting Div. Engr.

Tex., Woodville—Tyler County, J. E. Sturrock, Judge, plans 12,090 mi. grading, draining, Highway No. 106, Polk County line to Woodville; Exline Martin, Res. Engr., Corrigan.

Virginia—State Highway Comsn., Richmond, receives bids April 22 for 5 roads and 4 bridges; Patrick County—3 mi. macad. Route 12, from Stuart to Cruze's Store, 15,710 cu. yd. excavation, 14,214 sq. yd. macad.; bridge over Mayo River, 18,740 lb. rein. steel; Madison County—3.5 mi. grade, drain, Route 16, from point north of Robinson River to point south of Route 37, 46,936 cu. yd. excavation, 31,004 lb. rein. steel; Grayson County—4 mi. grade, drain, Route 12, from point east to point west of Independence, 53,614 cu. yd. excavation, 13,801 lb. rein. steel; bridge over Peach Bottom Creek, 46,535 lb. rein. steel; Halifax County—6.4 mi. soil, Route 44, from point east of Route 18 to Halifax County line, 107,723 cu. yd. excavation, 20,669 cu. yd. soil; Roanoke County—5 mi. macad. Routes 205 and 206, from point west of Roanoke, west, 94,615 cu. yd. excavation, 11,018 lb. rein. steel, 54,966 sq. yd. macad.; Halifax County—two 204-ft. bridges, Route 44, 12 mi. and 8.5 mi. south of Boston, over Aarons and Hyco Creeks, each, one 75-ft. steel truss, three 40-ft. rein. conc. beam spans, 137,120 lb. rein. steel, 156,000 lb. structural steel; C. S. Mullen, Ch. Engr.

Virginia—State Highway Comsn., Richmond, received low bids for 2 roads and bridges; Middlesex County—7,383 mi. grading, draining, Route 38, from point north of Saluda, north, Perkins-Barnes Construction Co., Inc., Blackstone, Va., \$34,588; Lee County—6 mi. stone, Route 103, Wallensville to Jonesville, T. K. Griffith, Bluff City, Tenn., \$22,698; Rappahannock County—105-ft. bridge over Rush River, Route 21, Washington, Va., Meigs & Mareau, Culpeper, \$7,672; C. S. Mullen, Ch. Engr.

Va., Richmond—Virginia Electric & Power Co. plans smooth paving between car tracks on various streets, including Fifth, Broad, Fourteenth St., etc.; R. Keith Compton, Dir. of Public Works.

West Virginia—State Road Comsn., Charleston, received low bids for 20 roads, 2 bridges and culvert; Fayette County—1.2 mi. grading, draining Mount Hope—Raleigh County line road, Hill Construction Co., Oak Hill, \$31,874; Greenbrier County—4 mi. grading, draining, Lewisburg-Caldwell road, James Cain & Co., Elkins, \$88,729; Jefferson County—4.4 mi. paving, Dailey Bridge-Virginia State Line road, Keely Construction Co., Empire Bldg., Clarksburg, \$88,747; Lewis County—8.2 mi. paving, Weston-Walkerville road, W. H. Armstrong & Co., Fairmount, \$224,635; Lewis County—7.2 mi. paving, Weston-Walkerville road, Keely Construction Co., \$197,711; Mason County—9 mi. retread surface course, Point Pleasant-Mason City road, H. H. Hudson, Point Pleasant, \$51,760; Marshall County—3.1 mi. retread surface course, Lindsay Hill-Round Bottom road, Murphy Construction Co., Migrantown, \$18,027; 5 mi. gravel surface, Butter Cameron, \$14,790.

In Mercer County—6.5 mi. widen with stone base and pave with retread surface course, Princeton-Athens road, R. B. Tyler Co., Louisville, \$76,515; Mingo County—6 mi. retread surface course, Nolan-Naugatuck road, R. B. Tyler Co., 1446 Levering St., \$76,515; 6.2 mi. stone surface, Williamson-Burch

road, Billups & Wellman, Huntington, First Huntington Nat'l Bank Bldg., \$28,140; Nicholas County—3.15 mi. resurfacing, Powells Mountain-Summersville-Swiss road, Codell Construction Co., Winchester, Ky., \$133,014; Pocahontas County—4.3 mi. paving, Greenbrier County line-Droop Mountain road, R. B. Tyler, \$37,753; Pocahontas County—22.7 mi. cold tar surface treatment, Bartlett Construction Co., Clarksburg, \$31,624; Preston County—1.6 mi. grading, cement conc. paving, Macomber-Rowlesburg road, Keely Construction Co., \$61,521.

In Putnam County—3.5 mi. grading, draining, Red House-Paradise road, Pinnell & Post, Ripley, \$53,114; Raleigh County—5.7 mi. grading, draining, and paving sections with retread surface course, Raleigh-Shady Springs road, Gilbert Construction Co., Fairview, \$209,731; Taylor County—2 mi. paving, Fetterman-Blueville road, W. H. Armstrong, Fairmont, \$53,260; Wayne County—7 mi. grading, gravel surfacing, Wayne-East Lynn road, A. A. Bostic, 130 Garyan St., Huntington, \$81,570; Wood and Pleasanton Couties—17 mi. retread surface course, Parkersburg-St. Mary's road, C. V. Rector, Spencer, \$105,332; Braxton County—Sutton Bridge, substructure, J. V. Tulley, \$24,218; superstructure, Nelson H. Clark, \$44,935; Wood County—Barnett Bridge, Boso and Ritchie, Ravenswood, \$22,104; Wetzel County—Haines Run Culvert, Price Construction Co., Huntington, \$16,034.

W. Va., Huntington—Cabell County Court received low bid from R. L. Black & Co., for 3 sections of roads in Grant Dist.; 3 mi. John's Creek road, \$15,746; 1 mi. Kilgore Creek and 2 mi. Culloden-Balls Gap road, \$13,156; J. M. Oliver, County Road Engr. 3-13

W. Va., Morgantown—State Road Commsn., Charleston, will make survey in April for State Route No. 73 between Fairmont and Morgantown, on east side of Monongahela River, Monongalia County, via Smithtown and Uffington.

#### Contracts Awarded

Ala., Birmingham—City Commsn. let contracts totaling \$40,885 for 8 paving and 2 sewer projects: Christie, Hutchinson & Burk, 502 N. Twenty-first St.; W. H. Pattie & Son, 2911 N. 29th St.; H. N. Bowdry, Martin Bldg.; Milner Land Co.; Paul Richter, 1805 Pearson Ave.; Fromhold Construction Co.; Henning & Bragan; for sewers: Sullivan, Long & Haggerty, Bessemer; A. J. Hawkins, City Engr.

Ark., Jonesboro—Commsr. of Street Improvement Dist. No. 34, H. Pewitt, let contract to Phoenix Construction Co., Fort Smith, at about \$50,000, to grade, drain, curb, gutter and pave with conc. about 8 streets; Guy W. Cobb, Engr., American Bank Bldg. 1-30

D. C., Washington—Dist. Commsr. let contract to Lucien P. Haw, 4114 Kansas Ave., N. W., at \$10,880, for grading various streets, 32,000 cu. yd. excavation; to Corson & Gruman Co., Thirty-third and K St., N. W., at \$15,260 for bit. surface treatment of macad. streets and roadways; 50,000 gal. asphalt; 9,000 gal. tar; 2,700 tons slag. 3-20

Fla.—State Road Dept., Tallahassee, let contract for 3 roads: Hillsborough County—33 mi. grading, surfacing, C. C. Moore, DeFunik Springs, \$21,619; Putman County—42 mi. grading, surfacing, L. M. Gray, Gainesville, \$17,116; Marion-Citrus Counties—.08 mi. grading, draining, Manley Construction Co., 216 N. Magnolia St., Ocala.

Fla., Lake City—State Road Dept., Tallahassee, reported, let contract to Williston Shell Rock Co., Williston, at \$86,831, for about 117,340 sq. yd. lime rock, for Road No. 28, Columbia County, Watertown to Union County line.

Ga., Ringgold—Cochran Construction Co., Atlanta, plans starting work within the next few days on surfacing road from Ringgold Ga., to Tennessee State line; 3-in. rock base, asphalt penetration.

La., Jennings—City, S. M. Gauthier, Clk., let contract to Fleckenk & Lilly, Shreveport, for 4 blocks 18-ft. double bit. surface treatment; Merrill Bernard, Engr., Crowley.

Mo., Clayton—St. Louis County let contract to John Dillon, St. Louis, \$38,863, to improve Woods Mill road, from Manchester road to point north; Roy Jablonsky, Highway Engr.

N. C., Sanford—City, Warren R. Williams, Mayor, let contract to A. S. Waters, Jr., Beaufort, at about \$50,000 for about 15 or 20 blocks conc. paving in residential dist.; Burlington Construction Co., Burlington, has contract for underground work. 3-20

Tex., Brownsville—Cameron County Commsr., let contract to Dodds and Wedegartner

at about \$227,551 for 13.2 mi. hard surface roads in San Benito Precinct, including San Jose Ranch, Pennsylvania Ave., Zillock Ranch and Oscar Williams roads.

Tex., Brownsville—Cameron County Commsr. Court let contract to L. G. Nichols Co., for improving 5 mi. roads.

Va., Hopewell—City, Roy S. Braden, Mgr., let contract to Atlantic Bitulithic Co., Washington, at about \$46,000, for resurfacing business streets; E. S. Van Demark, City Engr. 8-30

Va., Richmond—City, R. Keith Compton, Dir. of Public Works, let contract to City Building Corp., Builders Exchange, \$30,656, for curbing, gutters, paving and grading on South and Northsides.

W. Va., Charleston—Kanawha County Court, R. N. Moulton, Clk., reported, let contract to K. E. Reed Co., Stop 8, S. Charleston, at \$10,586, for surfacing roadway of new Patrick St. Bridge.

W. Va., Welch—State Road Commsn., Charleston, let contract to Hatfield Construction Co., Huntington; \$554,025, for grading and paving 9 mi. Welch-Mayberry road, McDowell County. 2-20

#### Sewer Construction

**Sewer construction in LAND DEVELOPMENT projects involves the expenditure of large sums of money. Under that classification details of these improvements are reported.**

Ala., Birmingham—See Roads, Streets, Paving.

Ark., Manila—See Water Works.

Ark., Mena—Southwestern Sewer Co., Dallas, Tex., Earl Weeks, Engr., construct disposal plant and extend mains. 3-20

D. C., Washington—W. A. Pate, Jr., 1048 29th St., N. W., reported, low bidder for Q St. replacements and Q St. combined sewer and for Broad Branch Rd. sewer; W. F. Brenizer Co., 101 New York Ave., N. E., for Otit St. sanitary sewer; Logan Pingree, for Sixth St., and Fourth St. sewer.

Fla., St. Petersburg—Director of Public Works, E. H. Lewis, 1610 22nd Ave., S., estimated \$275,000 as cost of proposed sanitary sewer system.

Fla., Tampa—See Roads, Streets, Paving.

Fla., Tampa—Bd. of Alderman authorized construction of sewers in West Tampa.

Ky., Louisville—Commsr. of Sewerage, W. M. Caye, Technical Engr., opens bids April 29 for \$78,000 sewer to drain part of Highland Park, connected to Highland Park-Beechmont sewer.

Ky., Louisville—Commsr. of Sewerage will construct 24-in. diam. sewer in Cherokee Park along creek bottom to Big Rock.

La., Lake Charles—C. A. Jones, Opelousas, has contract for extension of sewerage system on Sixth, Tenth and Eleventh Sts. 3-20

La., Plaquemine—Sanitary Appliance Co., Inc., Houston, Tex., reported, making survey for sewerage disposal plant.

Md., Baltimore—W. C. Briddell Co., Inc., 100 N. Eutaw St., low bidder at \$230,325 for 2 settling tanks at Back River sewage disposal work.

Md., Halethorpe—W. H. Thompson, has contract at \$77,193, for Herbert Run Interceptor Sect. 3, Contr. 20-S and 180-ft. brick manholes; Dante Contz Co., 216 S. Bend St., at \$44,716 for Contr. 21-S, 16,900 ft. of house connections, repaving 3500 ft. conc. sidewalks. 3-13

Miss., Laurel—I. C. Mischler, 105 Spruce St., Chattanooga, Tenn., has contract at \$49,795 for sanitary sewers; Paul C. Klyce, City Engr. 3-27

N. C., Boone—See Water Works.

Okl., Nichols Hill, P. O. Oklahoma City—Town considering issuing \$400,000 sewer bonds.

S. C., Greenville—Kelly-Wilson Co., Jackson Bldg., Asheville, N. C., has contract at \$26,996 for trunk line sewer. 3-20

S. C., Ninety-Six—See Water Works.

Tenn., Knoxville—O. T. Roehl Co., 215 N. Broadway, reported, has contract at \$42,000 for miscellaneous sewer construction for 6 months; Morgan & Gorman, 319 N. Broadway, Knoxville, at \$8825 for conc. work for 6 months, including curbing, culverts, sidewalks.

Tenn., Memphis—City, D. C. Miller, Clk., receives bids April 15 for sewers Cypress Creek, County Club, Normal Section, etc. See Want Section—Bids Asked.

Tex., Dallas—City voted \$4,000,000 bonds for rehabilitation of sewer system and building disposal plant. 4-3

Tex., Edcouch—City voted \$35,000 sewer bonds. 4-3

Tex., Fort Stockton—Municipal Engineering Co., Athletic Bldg., Dallas, reported, making survey for sewerage extension.

Tex., Nocoma—City install sanitary sewer system.

Tex., San Antonio—City votes May 7 on bonds for parks, river improvements and storm sewers. See Financial News Columns. 4-3

Tex., San Antonio—Kirkwood, Wharton & Lee, 523 N. Flores St., reported, has contract for Brazos St. storm sewer. 2-27

Tex., Sudan—See Roads, Streets, Paving.

Va., Richmond—Van Doren Bros., Hilliard and Hermitage Rds., Richmond, reported, has contract at \$110,970 for Oak Grove outfall sewer. 3-13

Va., Huntington—Marion F. Walker, 2035 Third Ave., has contract for Whitaker Blvd. sewer. 3-20

#### Street Railways

Va., Norfolk—Virginia Electric & Power Co. expend \$40,000 improving 18th St. car barns to accommodate buses; erect steel building to house street cars.

Va., Richmond—Virginia Electric & Power Co. expend \$288,000 on track improvements and extensions in city in 1930, major part for smooth-paving between car tracks.

#### Telephone Systems

Ala., Leeds—Leeds Telephone Co., erecting telephone building.

Ky., Flemingsburg—Kentucky State Telephone Co., Chicago, Ill., J. W. Bryne, Dist. Mgr., Brooksville, acquired Flemingsburg Telephone Co.

Ky., Lexington—S. R. Morgan & Co., Receptor Bldg., Little Rock, Ark., and Chicago, Ill., investment bankers, acquired Kentucky State Telephone Co., with headquarters here; company operates 52 exchanges in 24 counties in Eastern Kentucky; move general offices of Kentucky company to Chicago, Ill.

Md., Baltimore—Chesapeake & Potomac Telephone Co., Frederick J. Irish, Gen. Mgr., has site, St. Paul and Pleasant Sts., on which large telephone building is ultimately to be erected.

Md., Baltimore—Bd. of Directors of Chesapeake & Potomac Telephone Co. of Baltimore, Frederick J. Irish, Gen. Mgr., authorized expenditure of \$588,852 for additions and improvements to telephone plant in state.

Miss., Cleveland—Southern Bell Telephone & Telegraph Co., Atlanta, Ga., plans beginning work within few weeks reconstructing lines and building new ones throughout Mississippi Delta; extensions of long distance lines to be made on large scale, connect virtually every large Delta town with outside world.

Mo., Kansas City—Following have subcontracts in connection with toll building of Southwestern Bell Telephone Co., E. T. Mahood, Engr., Telephone Bldg.: Excavation and caissons, J. A. Schaefer Construction Co., 2103 Cass St.; plastering, J. W. Rowan Plastering Co., 411 N. 7th St., both St. Louis, orn. iron, Southwest Ornamental Iron Co., 1722 Tracy St.; painting, Theo. Lawrence Painting Co., 703 N. Y. Life Bldg.; waterproofing, O. H. Mann Co., 407 Dwight Bldg.; glass and glazing, Pittsburgh Plate Glass Co., 5th and Wyandotte St.; roofing, Western Roofing Co., 3117 S. W. Blvd., all Kansas City; marble, Carthage Marble Corp., Carthage; terra cotta, Northwestern Terra Cotta Co., 2325 Clybourne St., Chicago, Ill.; millwork, Goodjohn Sash & Door Co., Leavenworth, Kans.; granite, North Star Granite Corp., St. Cloud, Minn.; Selden Breck Construction Co., Gen. Contr., Fullerton Bldg., St. Louis; Holt, Price & Barnes, Archt., Telephone Bldg., Kansas City; I. R. Timlin, Co. Archt., Telephone Bldg., St. Louis. 3-6

Mo., Kingdom City—Southwestern Bell Telephone Co., W. O. Penhell, Ch. Engr., Telephone Bldg., St. Louis, let contract to Murch Bros. Construction Co., Railway Exch. Bldg., for telephone building; 1 story, 80x48 ft., brick, fireproof.

Tenn., Memphis—Memphis Broadcasting Co., Bank of Commerce Bldg., capital \$20,000,

incorporated; Mallory Chamberlain, Fidelity Bank Bldg.

Texas—See Gas and Oil Enterprises.

Va., Hopewell—Petersburg Telephone Co., Petersburg, preparing to place wires in conduits in business section.

Va., Richmond—Chesapeake & Potomac Telephone Co. of Virginia, B. N. Thornton, advises, Interstate Commerce Comsn. indicated approval of purchase of Midlothian, Dover and Hanover Telephone Companies, to be taken over as of May 1; plan completely rehabilitating properties and replacing all central office equipment. 3-13

W. Va., Huntington—Bd. of Directors of Chesapeake & Potomac Telephone Co. of West Virginia appropriated \$246,010 for improvements and additions to system in state.

W. Va., Martinsburg—Chamber of Commerce appointed William F. Flery and G. Bruce Geyer as committee to investigate establishing of broadcasting station.

### Textile Mills

Ga., Eatonton—D. C. Collier, Pres., Southern Mfg. Co., Athens, reported, acquired Harris Cotton Mills.

Ga., Griffin—Griffin Mills, recently acquired by R. E. Hightower, Thomaston, reported, revamping plant; install 530 shuttle changing looms purchased from Stafford Co., Readville, Pa.; Arthur L. Emery, Gen. Mgr. 1-9

N. C., Burlington—A. N. Johnson Rayon Mills, Inc., reported, double production capacity of spinning department; Dr. Frederick Nelderhauser, completed survey for program of expansion. 12-5

N. C., Mount Airy—Pine State Knitwear Co., Willow St., incorporated; Joe W. Brook, Edw. M. Linville; establish plant for manufacture sweaters and bathing suits, daily capacity 25 doz.; install 8 knitting machines; Wildman Mfg. Co., Norristown, Pa., and Singer Sewing Machine Co., Bridgeport, Conn., Equipment Contrs.

N. C., Stanley—Katterman & Mitchell Co., Paterson, N. J., reported, acquired Lola Gingham Mills; plans installing additional equipment.

N. C., Varina—Varina Knitting Co., incorporated; Harold E. Parker, J. M. Judd.

S. C., Hartsville—See Water Works.

Tex., Houston—Mente & Co., Inc., 1430 S. Peters St., New Orleans, La., reported, establish branch plant between Hill and Meadow Sts.; manufacture bagging, ties and burlap bags.

### Water Works

Details of water works improvements in connection with the many LAND DEVELOPMENT operations will be found under that classification.

Ala., Birmingham—Louisville & Nashville R. R., let contract to Christie, Hutchinson & Barton, 502 N. 21st St., for conc. pedestal and valve room for water tank; contract for tank and tower let to Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Ark., Fayetteville—City probably vote May 8 on \$54,000 bonds for construction of retaining dam to add to city water storage system.

Ark., Foreman—Mid-West Water Works Co., construct storage basin.

Ark., Malia—City install water works and distribution system and sanitary sewer system for entire town. 3-27

Ark., Mena—City, plans addition to water works; cost about \$40,000. 3-20

Ark., Rogers—Southwest L. E. Myers Co., Exchange Bank Bldg., Dallas, Tex., reported, has contract for rebuilding water system of Southwestern Gas & Electric Co.

Ga., Dalton—City, reported, rejected bid for filtration plant; will call for new bids; Wiedeman & Singleton, Engrs., Candler Bldg., Atlanta. 3-20

Ky., Grayson—Town Bd. of Trustees plans granting water franchise.

La., Lake Providence—Fairbanks, Morse & Co., 900 S. Wabash Ave., Chicago, Ill., reported, has contract for 600 h.p. Diesel engine for water works and electric plant; cost \$40,000.

La., Shreveport—K. C. Wilson, Slattery Bldg., has contract for water works, including new pumping station and filtration plant, consisting of 48-in. conc. intake; high and low service pumping station containing 4 and 8,000,000 gal. high service and 4 and 8,000,000 gal. low centrifugal pumps; conc. settling basin; conc. clear water reservoir; wash water tank; four 2,000,000 gal. filter units and 20-in. discharge main to connect with present distribution system; The J. N. Chester Engineers, Clark Bldg., Pittsburgh, Pa.

Maryland—See Bridges, Culverts, Viaducts.

Md., Baltimore—M. & J. B. McHugh, 3716 Sequoia Ave., has contract at \$20,805 for mains in Wilkins Ave. from Caton Ave. to city boundary line. 3-6

Md., Baltimore—Ryan Construction Co., 600 Walnut St., Philadelphia, Pa., has contract at \$46,723 for Storm Water Contr. No. 142. 3-12

Mo., St. Louis—Commonwealth Utilities Co., subsidiary of United Gas Improvement Co., 1401 Arch St., Philadelphia, Pa., reported, negotiating for common stock of St. Louis County Water Co.

Mo., St. Louis—Laymens Retreat League, J. P. Monaghan, 221 N. Grant Blvd., reported, plans water supply distribution system, White House, south of Jefferson Barracks.

N. C., Boone—Town, L. L. Bingham, Clk., reported, plans installing \$25,000 sewer and water system.

N. C., Charlotte—City, R. W. Rigsby, City Mgr., received bids April 18 for water main construction. See Want Section—Bids Asked.

N. C., High Point—City opens bids latter part of April for \$90,000 water works improvement, including big capacity elevated tank and tower; W. C. Olsen Co., Engrs., Bldg. & Loan Bldg., Raleigh. 4-3

N. C., Sammecand—Bd. of Directors Sammecand Manor, Dr. Della Dixon Carroll, Chmn., receives bids April 28 for improvements to water purification plant. See Want Section—Bids Asked.

Okla., Clinton—City, W. A. Shouse, Clk., call for bids soon on \$60,000 water works improvements; Benham Engineering Co., Oklahoma City, preparing plans. 3-13

Okla., Cyril—Town let contract to Sherman Machine & Iron Works, 18 E. Main St., Oklahoma City, for extension to water works; 7200 ft. of 4-in. c. i. pipe and 1000 ft. of 2-in. c. i. pipe; erect 50,000 gal. standpipe; install turbine type pump; V. V. Long & Co., Engr., Colcord Bldg., Oklahoma City.

Okla., Freedom—City, voted \$15,000 water works bonds; C. A. Wood, Engr., Oklahoma City.

Okla., Roosevelt—City, reported, soon receive bids for pumping equipment, tank and tower, etc.; cost \$20,000; let contract to Western Construction Co., 922 Hales Bldg., Oklahoma City, for main extensions; Benham Engineering Co., Engrs., 1106 Perrine Bldg., Oklahoma City.

S. C., Charleston—Supvg. Archt. Treasury Dept., Washington, D. C., opens bids May 10 for furnishing and installing wells, pumping plant, etc. at U. S. Quarantine Station; contractors estimating are: Columbia Contracting Co., 2 Lafayette St., New York City; Walter Kidder, Meridian, Miss.; Newport Contracting & Engineering Co., Newport News, Va.; W. C. Spratt, Frederickburg, Va.; Virginia Engineering Co., Newport News, Va.; O'Pry Plumbing & Heating Co., 163 Cotton Ave., Macon, Ga.; J. L. Powers, Bennettsville, S. C.; English Construction Co., 1311 H St., N. W., Washington, D. C.; Virginia Machinery & Well Co., 1319 E. Main St., Richmond, Va.; Walthaw Corp., 1860 Broadway, N. Y.; Sydnor Pump & Well Co., 1310 E. Main St., Richmond, Va.; Bickelhaupt, Inc., American Bank Bldg., Richmond, Va.

S. C., Hartsville—Hartsville Print & Dye Works, reported, let contract to Sam N. Hodges Co., Erlanger Theatre Bldg., Atlanta, Ga., for rein. conc. reservoir and for miscellaneous machine foundations; plans by company's engineering department.

S. C., Ninety-Six—Geo. C. Odiorne, has contract for water and sewerage system, Ryan Engineering Co., Engrs., Arcade Bldg., Columbia. 2-20

Tenn., Chattanooga—City Water Co., advises pumping station is being constructed in St. Elmo for housing pump to deliver water in Lookout Mountain and also one to deliver water to St. Elmo high service district; contemplated expenditure is approximately \$20,000; laid 8 in. Tabott lined

pipe to top of Lookout Mountain; all materials for this work contracted for and work being done by company's forces. 4-3

Tenn., Newbern—Town let contract to Carliss Well Supply Co., Front & Gayoso Sts., Memphis, for 8-in. Cook well and deep well centrifugal turbine pump.

Tex., Caldwell—City, C. E. Cromartie, Mayor, reported, plans improvements to water works, reservoir, etc.; J. Rady, Consil., Engr., Waco.

Tex., Dallas—McWane Cast Iron Pipe Co., 3600 11th Ave., Birmingham, Ala., reported, has contract for pipe for water service.

Tex., Fort Worth—Cain & Cain, Moore Bldg., Fort Worth, low bidder for building for Rosen Heights water booster plant.

Tex., Fort Worth—Jacobson, Sweeney & Jacobson, Galveston, has contract for driving 26,000 sq. ft. steel sheet piling to connection with Tarrant County Dams; McKenzie Construction Co., Constrs., Smith-Young Tower, San Antonio. 3-6

Tex., Robert Lee—City, J. Craddock, Mayor, reported, plans \$30,000 water works, dam, etc.

Tex., Smithville—City Engr. Dept., having preliminary surveys made for improvements water works, e. i. pipe for mains, etc.

Va., Lynchburg—City, R. W. B. Hart, Mgr., plans constructing standpipe to reinforce Fairview Heights water supply system; capacity of 477,000 gal.; build reservoir on Hughes Ave.

Va., Waverly—East Coast Water Co., Inc., 900 Princeton St., reported, let contract to Lilly Bros., Bluefield, for filtration plant.

### Woodworking Plants

Mo., Harviell—Harviell Stave & Heading Co., has plans for \$55,000 mill; 1 story; install electrically operated machinery.

N. C., Maxton—Hasty Veneer Co., capital \$100,000, incorporated; E. E. Candler, C. A. Hasty.

### FIRE DAMAGE

Ala., Almyra—Almyra Elevator & Rice Milling Co.'s plant, 15 mi. southeast of city; loss \$30,000.

Ark., Hot Springs National Park—Grandstand of Whittington Park; address The Management.

Ark., Bradford—Methodist Church and parsonage; bldg. occupied by Masonic Temple and American Legion, dwelling owned by Mack Estate; Tom Humphrey's barn; loss \$40,000.

Ga., Elberton—Main building of Beverly Cotton Mills on Beaverdam Creek, owned by First National Bank.

Ga., Gainesville—Candler Junior High School, 7 mi. from Gainesville; J. D. Underwood, Hall County Supt. of Education.

Ga., Rome—Building occupied by Seminole Bottling Co., Georgia Mfg. Co., and United Grocery store.

Ga., Tennille—Newsome Hotel in Glascock County; loss \$12,000; address The Proprietor.

Ky., Campion—Buildings of J. E. Chilvers, Coons & Steel, J. E. Caudill, Wolfe County Journal, J. H. Stamper, A. Sherman, Cabel & Colson, N. B. Miller, James Drake, Elmer Robert; loss \$40,000.

Ky., Pineville—Home Furniture Co.'s store, Richard G. Wells, Prop.; loss \$15,000.

La., New Orleans—Sisters of Mercy Convent, 2523 Prytania St., damaged.

Md., Easton—Walker Apts., owned by Miss Fannie Belle Walker.

Miss., Brookhaven—A. W. Hart Motor Co.'s building; Ratcliff Sheet Metal Works; Ben F. Toler's Confectionery and Notion Store.

Miss., Glendora—Llewellyn's Grocery; Fry's Restaurant; Seawright's Commissary; loss \$30,000.

N. C., Burlington—Perfection Hosiery Mills, North Main St.; loss \$75,000.

N. C., Charlotte—Buildings of Carolina Waste Paper Co.; D. D. & M. Sizing Co.; loss \$50,000; Carolina Refrigerating Co.; Martin-Parry Body Co., builders of commercial truck bodies; C. A. Black Transfer Co.

N. C., Pink Hill—Dr. Flavius Maxwell's residence.

Okl., Oklahoma City—Rodman Broomcorn Co.'s warehouse, 6th St. and Pennsylvania Ave., owned by W. J. Rodman, 308 W. 17th St.; loss \$10,000.

Okl., Tulsa—Glenwood Baptist Tabernacle, Sand Springs Highway near Tulsa; loss \$25,000.

S. C., Darlington—Darlington Hotel; Star Cafe; Langston Haberdashery; Wellington & Bennett's hardware store; R. F. Hutchins Paint Shop; Metropole & Holiday's store; Metropole Ice Cream Factory; loss \$150,000.

Tenn., Elizabethton—Delmar Nave and C. L. Harrell's store; loss \$10,000.

Tex., Big Spring—R. E. Gray's buildings occupied by Big Spring Hatchery, Big Spring Seed & Fuel Co., Chieftain Drug Store, S. & S. Printing Co., loss \$50,000.

Tenn., Trenton—Laneview High School, 4 mi. from Trenton; loss \$15,000; F. L. Brownning, Supt. of Education.

Tex., Fort Worth—M. G. Ellis Grade School in North Fort Worth; loss \$20,000.

Va., Easton—Miss Fannibelle Walker's store, Dover and Aurora Sts.; Hardcastle & Forney's store; Lee Sing and R. Snyder's stores; loss \$25,000.

Va., Front Royal—J. L. Miller's residence; vacant dwelling owned by R. L. Lockhart; Mrs. Mary Cook's barn.

Va., Roanoke—"The Meadows," residence owned by Mrs. J. C. Motley, Abingdon.

Va., Roanoke—Raleigh Hotel, damaged; owned by George McBain, Jr.; loss \$15,000.

Va., Roanoke—Roanoke College, damaged; \$16,000.

W. Va., Mannington—T. M. Haugh's garage; H. E. Baker heirs' building; Bosley Boarding House; loss \$40,000.

W. Va., New Martinsville—People's Furniture & Hardware Supply Co.'s warehouse; loss \$12,000.

W. Va., Stickney—Jarrell Hotel owned by Charles Jarrell; loss \$25,000.

W. Va., Welch—Daniel Bldg. on McDowell St., owned by Graham Sale.

bldg.; 1½ stories, 60x75 ft., comp. roof; Edwin B. Phillips, Archt., Fidelity Bk. Bldg., Memphis, Tenn.; drawing plans.

Mo., St. Louis—Trinity Evangelical Church, Rev. H. T. Bahnsen, Pastor, 4708 S. Grand Ave., erect \$100,000 church and Sunday school; Grand and Itasca St., after plans by L. Haeger, 3844 Utah Place; brick, 2 stories.

Mo., St. Louis—Hope Lutheran Church, Neosho St. and Brannon Ave., about ready for bids for \$75,000 church and Sunday school; brick, 1 story and basement, slate roof, marble and tile work; Steinmeyer Bros., Archts., Int'l. Life Bldg. 2-27

N. C., Charlotte—Westminster Presbyterian Church, R. C. Forbis, Chmn., Bldg. Comm., care Chemical Construction Co., 1206 South Boulevard, has plans by Chas. C. Hook, Archt., Commercial Bank Bldg., for \$25,000 Sunday school, E. Morehead St. and Dilworth Rd.; main auditorium and community center bldgs. later. 1-30

S. C., Cross—Friendship Methodist Church, Rev. R. P. Hicks, Pastor, erect \$10,000 brick bldg.; auditorium and 6 classrooms; work start in May.

S. C., Holly Hill—Methodist Church, J. Francis Folk, Chmn., Bldg. Comm., erect \$25,000 bldg.; brick purchased; bids from contractors until April 18; Jas. B. Urquhart, Archt., Columbia.

S. C., Spartanburg—Central Methodist Church plans Sunday school addition.

Tenn., Knoxville—Emerald Ave. M. E. Church, Rev. A. Meek Stone, Pastor, call for bids within about 1 week for \$40,000 bldg., Emerald and Central Aves.; A. E. Gredig, Archt., Mercantile Bldg.

Tenn., Knoxville—Calvary Baptist Church, Yale Ave. and 18th St., Rev. H. K. Williams, Pastor, plans Sunday school addition at rear; brick and concrete.

Tenn., Nashville—Summerville Baptist Church, K. C. Baker, Pastor, erect church and Sunday school; brick and conc., 1 story.

Tex., Alice—Methodist Church erect \$35,000 to \$50,000 bldg.; also erect parsonage, First St.

Tex., Houston—Church of the Redeemer, Eastwood, erect Sunday school and community house, \$100,000, as first units of \$200,000 church; main auditorium later; Sunday school 43x78 ft., 3 stories; community bldg. 40x75 ft. with 16x22-ft. stage, seat 450 to 500; J. W. Dehnert, Archt., Esperson Bldg.; probably call for bids within 30 days.

## CITY AND COUNTY

Ala., Cullman—Cullman County Bd. of Revenue erect \$45,000 jail.

Ark., Pine Bluff—City, R. E. Lee, City Clk., voted \$63,000 library bonds; Chris L. Wright, City Engr. 3-13

Fla., Hogan, South Jacksonville—Duval County Bd. of Commrs. and Bd. of Mgrs. of Duval County Parental Home receive bids until April 21 for dormitory; \$15,000, brick, stone trim, 2 stories and basement, marble and tile work, comp. shingle and built-up roof, conc. foundation; Jefferson D. Powell, Archt., Professional Bldg.; following contractors estimating: Bryson Construction Co., W. 14th St.; Smith Hendrix Co., Barnett Bldg.; John Fuhrer, 1464 Edgewood Ave.; Keller Construction Co., Atlantic Bank Bldg.; Kidd Construction Co., Masonic Temple Bldg.; N. L. Nelson, 2948 Park St.; A. L. Clayton, Blum Bldg. 2-20

Miss., Laurel and Ellisville—Jones County defeated \$70,000 bonds for improvements and additions to courthouses at Laurel and Ellisville; L. W. Duffee, Archt., Room 13, O'Ferrall Bldg.; Laurel; projects deferred for present. 3-13

Mo., Marshfield—Webster County Court, W. R. Holloway, member, having plans drawn by G. F. Reed, Woodruff Bldg., Springfield, for \$100,000 courthouse; brick, 2 stories; considers calling bond election. 4-3

Mo., St. Louis—Board of Police Comms. has requested Bd. of Estimate and Apportionment to appropriate \$220,000 for new Mounted District Police Station.

N. C., Wilmington—City Coms., has low bid at \$12,526 from W. A. Simon for alterations and additions to old market place, Front St. near Ann St.

Tex., Lubbock—Lubbock County, Robt. H. Bean, County Judge, votes April 26 for \$250,000 courthouse and jail bonds. 4-3

Tex., San Antonio—City, C. M. Chambers, Mayor, votes May 7 on \$5,000,000 bonds.

## BUILDING NEWS

### BUILDINGS PROPOSED

#### ASSOCIATION AND FRATERNAL

Ark., Helena—Young Men's Christian Assn. considers erecting building.

Georgia—Georgia American Legion, B. M. Lufbarrow, Chmn., Memorial Comm., advises will be July or Aug. before bids are called for on stone memorial and watch tower bldg., Blood Mountain, Appalachian Scenic Highway, Union County. 3-13

Mo., Eldon—Ancient Free and Accepted Masons approved preliminary plans for temple; brick and steel, 2 stories and basement, 85x42 ft.; LeRoy Parrish, Archt., 115½ W. High St., Jefferson City.

Okla., Duncan—Benevolent Protective Order of Elks, Harry Baker, Chmn., Bldg. Comm., plans to start work in about 60 days on \$50,000 lodge bldg. after plans by Walter T. Vahlberg, Archt., Braniff Bldg., Oklahoma City; brick and conc., 3 stories, about 40x100 ft., wood and conc. floors, comp. roof, conc. foundation. 11-21

Tenn., Nashville—Young Women's Christian Assn., Mrs. John R. Aust, Pres., Governing Bd., 2616 Belmont Blvd., considers remodeling bldg.; brick, 2 stories.

#### BANK AND OFFICE

D. C., Washington—Methodist Episcopal Bd. of Temperance, Prohibition and Public Morals, Methodist Bldg., First and Maryland Aves., N. E., considers erecting 5-story addition to bldg.; stone, conc., brick and steel; tentative plans call for 120-ft. frontage; 50-car garage in basement, first floor (16,000 sq. ft.) for offices of Board, apartments above; J. Lee Wilkinson, Archt., 1007 South Carolina Ave., S. E., Washington, and Falls Church, Va.

D. C., Washington—Brooks Institute, 1724 I St., N. W.; Porter & Lockle, Archts., 1800 E St., N. W., advises plans probably go out for bids in few days for 8-story office bldg.; date of opening not known; structure \$400,000, Ilimestone. 2-13

Ga., Columbus—Tom Huston Peanut Co. erect office bldg.; brick, 1 story, basement and tower, conc. footings, comp. roof, steam heat; T. Firth Lockwood, Archt., Murrah Bldg.

La., Opelousas—Parish Bank & Trust Co. erect \$20,000 bank and store bldg., Court and Landry Sts.; brick, stone trim, 1 story and mezzanine, 51x63 ft., rein. conc. foundation, built-up comp. roof, steel and iron work, steel sash, plate glass windows; Herman J. Duncan, Archt., 120 Murray St., Alexandria.

Mo., Kansas City—Kansas City Power & Light Co. soon start work on 30-story office bldg. without set-backs, 14th St. and Baltimore Ave.; City modified zoning law to permit construction; 501 ft. high, 41-ft. penhouse surmounted by 87-ft. ornate tower above 30th floor; \$2,000,000; Holt, Price & Barnes

Archts., Telephone Bldg.; H. F. Freshman, company archt.; O. R. Bettis, company engr., both 1330 Grand Ave. 3-6

Okla., Tulsa—Real Estate Investment Corp., Giles A. Penick, Pres., Mc Birney Bldg., Fourth and Third Sts.; site 75x80 ft.; M. L. McCune, Archt., Atlas Life Bldg.

Tenn., Kingsport—Kingsport Utilities Co. erect 2-story office bldg., Broad St.; will give 73x102-ft. site to City for park; City to plant shrubbery and flowers.

Va., Norfolk—Virginia Electric & Power Co., 200 E. Plume St., exercised option, property Boush and Bute Sts., as site for \$300,000 office bldg.; steel or rein. conc., brick and terra cotta exterior, 6 stories, 75x118 ft., Calrow, Browne & FitzGibbon, Archts., Royster Bldg. 3-20

Va., Richmond—Medical Science Corp. plans \$500,000 Medical Science Bldg., 104 W. Franklin St.; 6 stories and basement, 104 x 100 ft.; 4 stores on first floor; Otis K. Asbury, Archt.; 3232 Kensington Ave., work probably start by May 1.

#### CHURCHES

Ark., Little Rock—Pulaski Heights Baptist Church, W. R. Donham, Chmn., Bldg. Comm., selected plans by Petter & McAninch, Inc., Pyramid Life Bldg., for \$125,000 to \$150,000 bldg., Beech and I Sts.; Gothic type, brick and stone, 165 ft. front; auditorium seat 1000, Sunday school auditorium seat 1000, assembly room to seat 500 in basement; break ground in July. 1-16

Fla., Plant City—Baptist Church erect building.

Md., Annapolis—First Presbyterian Church, Paul Kieser, Chmn., Bldg. Comm., erect \$150,000 church, Sunday school and manse, Franklin Acton Court; brick, 3 stories; plans by A. G. Lamont, Archt., Presbyterian Bd. of National Missions, 156 Fifth Ave., New York; plans about complete.

Md., Baltimore—West Baltimore M. P. Church, Allen W. Beam, Chmn., Bldg. Comm., Fulton and Harlem Aves., has sketches for \$150,000 church, Sunday school and parish house, Edmondson Ave. and Charing Cross Rd.; stone, 1 story; Owens & Sisco, Archts., Continental Bldg.; nothing definite.

Md., Emmitsburg—Emmitsburg Lutheran Church, E. R. Shriver, member, Bldg. Comm., has broken ground for \$26,000 parish house; native stone, 1 and 2 stories and basement, 48x80 ft.

Miss., Meridian—St. Joseph R. C. Church erect brick bldg.; 1 story and tower, 32x75 ft., rein. conc. foundation, sheet metal, furnace heat; R. C. Springer, Archt., Rosenbaum Bldg.

Miss., Webb—First Baptist Church, Rev. Arthur L. Jordan, Pastor, erect brick veneer

including \$600,000 for erecting and equipping fire and police stations, \$150,000 for sports bldg. and stadium at Exposition Grounds, and \$150,000 for 100-bed children's annex to Robert B. Green Memorial Hospital. 2-27

Tex., San Antonio—City, A. Marbach, City Engr., having plans drawn by Harvey P. Smith, Archt., Natl. Bank of Commerce Bldg., for English type amphitheater, Lone Star Garden, Brackenridge Park. 3-13

Va., Rosslyn—Arlington County Civic Federation, F. E. Hann, member, Cherrydale Citizens Association, Cherrydale, interested in erection of jail; request County Bd. of Supvs., to provide \$30,000 in budget, to be added to \$11,000 already available.

Va., Westhampton, R. Sta., Richmond—Westhampton Fire Dept. erect fire engine house, Maple Ave. near Grove St.; R. Stuart Royal, Inc., drawing sketches.

### Dwellings

Ala., Birmingham—W. H. Sadler, Amer. Traders Bldg., erect brick veneer residence, Rockbridge Park; 2 stories, slate roof, steam heat; Miller & Martin, Archts., Title Guar. Bldg.; bids in.

Ark., Amity—Clint Thompson erect brick veneer and stone residence; 1 story, oak floors, comp. roof, 6 rooms.

Ark., Conway—Sisters of Notre Dame consider erecting dwelling at church; brick veneer, 1 or 2 stories, about 10 rooms.

Ark., England—Mrs. F. L. McTigue erect brick veneer residence; oak floors, comp. roof, 1 story, 5 rooms; start work at once.

D. C., Washington—Fredk. B. Mills, 44 Longfellow St., N. E., have permit for 2 brick dwellings, 5700-02 Fourth St., N. W.; 2 stories; \$14,000.

D. C., Washington—P. H. Willis, 927 15th St., N. W., has permit for \$10,000 dwelling, 7400 Fourteenth St., N. W.; brick and tile, 2 stories.

D. C., Washington—Wenger Bros., Inc., 1627 K St., N. W., have permit for 2 brick dwellings, 3841-45 Cathedral Ave., N. W.; 2 stories.

Fla., Allendale—Cade B. Allen started work on additional dwelling, Allendale Terrace; English type, 7 rooms, 2 baths; also start work about April 15 on Spanish type dwelling; 10 rooms, 4 baths.

Fla., Vero Beach—L. C. Whitlark, Vice-Pres., Barrett Bros. Co., Springfield, O., plans winter residence, Royal Park.

Ga., Atlanta—Wm. Kiser, 206 Pryor St., S. W., has low bid from Collins, Holdbrook & Collins, Atlanta Tr. Co. Bldg., for residence, Paces Ferry Rd.; Hentz, Adler & Shutze, Archts., Candler Bldg. 2-13

Ga., Augusta—I. S. Peebles, Jr., Marion Bldg., erect \$15,000 residence, Hickman Rd.; brick veneer, conc. footings, 2 stories and basement, hardwood and tile floors, slate roof, steam heat; Scroggs & Ewing, Archts., S. F. C. Bldg.

Ga., Columbus—Paul K. McKenney erect residence, Oak Drive; brick, field and cast stone, 2 stories and basement, 91x45 ft., hardwood and tile floors, interior marble trim. Columbia mantel, slate and copper roof. Dexter ventilators. Celotex. Bessler stairs; T. Firth Lockwood, Archt., Murrah Bldg.; bids April 7.

Ky., Lexington—H. R. Taylor erect \$10,000 residence, Richmond Rd.

La., New Orleans—Dominican Fathers have low bid at \$37,729 from J. A. Petty & Sons, Inc., Godchaux Bldg., for rectory; Wogan & Verner, Archts., Canal Bk. Bldg. 3-20

La., New Orleans—Mrs. Leonore Brunies considers erecting residence, Metairie Highway, Oak Ridge Park.

Md., Baltimore—Bel-Mar Engineering Co., Calvert Bldg., erect 10 brick dwellings, 1100 block S. Bonsal St.

Md., Baltimore—Thos. Mullan, 3945 Greenmount Ave., erect 2 brick dwellings and garages, 516-18 E. 39th St.; 2 stories; \$10,000.

Md., Baltimore—Jas. S. Sloan, 810 N. Charles St., plans residence, Oxbury Rd., Gibson Island; 7 rooms, 3 baths.

Md., Baltimore—John L. Tregellas, 10 E. Fayette St., has permit for 7 frame dwellings, 5500 block Fair Oaks Ave.; 2 stories; \$22,000.

Md., Baltimore—Harry C. Michael, Calvert Bldg., erect 3 frame dwellings and garages, 2306-09 Monticello Ave.; \$14,000.

Md., Royal Oak—R. B. Marshal, Pres., Marshal & Co., Inc., Union Bk. Bldg., Pittsburgh, Pa., reported, erect \$100,000 residence, Irish Creek; brick, 2 stories; R. M. Marller, Archt., Empire Bldg., Pittsburgh.

Miss., Meridian—Mrs. Wyatt Easterling, 1216 21st Ave., erect \$10,000 residence, Grand View Ave., brick veneer.

Mo., St. Louis—Paul L. Hale, 2121 Maury Ave., erect brick residence, Childress St. near Chippewa Ave., Chippewa Park, Watson; cut stone trim, 2 stories and basement, 29x35 ft., hardwood floors, tile and Vitrolite bath, slate coated shingle roof, hot air heat; Chas. R. Greene, Archt., Wainwright Bldg., St. Louis.

Mo., St. Louis—Mrs. Dr. L. G. McCutcheon, care Aegeerter & Bailey, Archts., Ry. Exch. Bldg., erect brick residence, Hanley Rd.; 2 stories and basement, 34 x 43 ft., hardwood floors, copper sheet metal work, tile work; 22 x 30-ft. garage; bids in.

N. C., Charlotte—J. M. Viter, 1511 E. Seventh St., erect \$10,000 residence, 12 Ardsley Rd.; brick.

Tenn., Memphis—Dr. D. K. Sauls, Bank of Commerce Bldg., erect brick and stone residence, Hahn Park sub-division; 2 stories, tile baths, hardwood floors, comp. or tile roof; plans complete.

Tenn., Memphis—M. S. Lemman, 33 N. Belvedere St., remodel residence for duplex; brick veneer; 2 additional rooms and bath; Claude Northern, Archt., Fidelity Bk. Bldg.; bids in.

Tenn., Memphis—Frank O. Davis, 400 Prospect St., erect brick veneer residence, N. E. Rugby Park; 1 story, 70x37 ft., oak floors, 2 tile baths, slate roof; L. D. McDaniel, Archt.; Durward Simmons, Asso. Archt., both Goodwyn Inst. Bldg.; preliminary plans.

Tex., Fort Worth—J. H. Fickling has permit for \$11,000 residence, 4609 Meadowbrook St.; brick veneer.

Tex., Houston—E. H. Fleming, Democratic Bldg., has permit for \$10,000 residence, 2320 Quenby Rd.; brick veneer, 7 rooms.

Tex., Houston—Fantham & Fantham, Second Natl. Bank Bldg., plan several dwellings, Bissonett; Robt. H. Maddrey, Archt., 623 Epsom Bldg.

Tex., Houston—Dr. J. C. Michael, Medical Arts Bldg., has permit for \$15,000 residence, 2517 Del Monte St.; brick veneer, 11 rooms.

Tex., Houston—H. Seltzer, 1901 Dennis St., has permit for 2 brick veneer dwellings, 2111-15 Blodgett St.; 7 and 8 rooms.

Tex., Houston—Roy Corbin has permit for 2 brick veneer dwellings, 3015-3101 Southmore St.; 7 rooms.

Md., Baltimore—J. Hurst Purnell, Wingate & Sedgwick Rds., plans \$20,000 residence, 4409 Keweenaw Rd.

Tex., Beaumont—H. D. Harlan, San Jacinto Life Bldg., erect \$25,000 residence, Averill Addition.

Tex., Fort Worth—T. Blair has permit for \$11,000 brick veneer duplex, 2816 Cassell St.

Tex., San Antonio—Mrs. Eloise T. Woodhull, care H. B. Thomson, Archt., Alamo Bk. Bldg., erect English type residence, 100 block N. Gramercy St.; whitewashed brick veneer, 2 stories, 9 rooms, 2 baths, 2-car garage and servants' quarters; Fred Gauatz, Archt., Alamo Bk. Bldg.

### Government and State

D. C., Washington—Supreme Court Building Com. probably start work razing structures on site of proposed \$9,740,000 Supreme Court Bldg., E. Capitol St., Maryland Ave., First and Second Sts., within 30 days and let contract by Fall; fireproof, Colonial type. Corinthian motif, marble trim in interior. 385x304 ft., central section 4 stories above east front terrace, 3 stories on west front, remainder lower; Supreme Court room above, 64 ft. square, about 30 ft. high; public and private corridors, elevators; law libraries on second and third floors; inclined driveways to basement, auto storage space, ventilation system; Cass Gilbert, Archt., 244 Madison Ave., New York, constr. to be under supervision of David Lynn, Architect of the Capitol. 12-26

D. C., Washington—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., has low bid at \$156,975 from Gurney Elevator Co., Inc., 109 W. 6th St., New York, for elevators for Dept. of Agriculture extensible Bldg.; Nelson-Pedley Construction Co., Inc., 1510 Chestnut St., Philadelphia, Pa., lately noted to have low gen. bid at \$2,074,000 for terra cotta and at \$2,330,000 for marble. 4-3

Fla., LaBelle—Mrs. Corinne Forrey erect arcade bldg., Bridge St., to contain post office and 2 stores; 60x72 ft.; plans by Everett Burchard; to be complete by July 1.

Ga., Atlanta—Federal Penitentiary, care J. A. Cook, Engr., McDonough Rd. S. E., and Boulevard, erect stone, brick, tile, rein. conc. and struct. steel addition to hospital; 3 stories and basement, about 50x100 ft., terrazzo, conc. and comp. floors, steel sash, steel doors, slate and comp. roof; plans by Robert & Co., Inc., Engrs., Bona Allen Bldg.

Ky., Lexington—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., plans courthouse and postoffice bldg.; \$761,000 appropriation available.

La., Monroe—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., plans to let contract during June for \$40,000 post office annex; 1100 sq. ft. additional floor space, 700 lock boxes. 1-9

Maryland—Sub-committee of Governor's comm., Lacey Shaw, Chmn., Rockville, investigating institutions in company with Howard W. Cutler, Archt., 1800 E. St., N. W., Washington, D. C., with view to establish central almshouse for Western Shore of Maryland; Governor's comm. also studying feasibility of establishing almshouse on Eastern Shore.

Miss., Lumberton—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., plans \$65,000 Federal building.

Miss., Natchez—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., plans to let contract during June for post office annex. 10-17

N. C., Fort Bragg—Constructing Quartermaster has low bid at \$142,250 from F. H. Grimm Co., Fayetteville, for 1 field artillery regimental barracks and utilities. 3-27

N. C., Lenoir—Following contractors estimating on post office, bids May 6 by Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C.; Potter & Shaeffer, Inc., Allen Bldg., Greenville, S. C.; Hartley & Smith, Lenoir; Theriault Contracting Co., 534 E. Johnson St., Philadelphia, Pa.

Tex., Fort Sam Houston, San Antonio—Constructing Quartermaster, Capt. Will R. White, has low bid at \$29,879 from L. T. Wright & Co., Builders Exchange Bldg., San Antonio, for signal communication center bldg.; brick, struct. clay tile, stucco, and rein. conc., 2 stories and basement, 50x30 ft., cement, mastic and linoleum floors, steel sash, metal lath. 3-27

Va., Petersburg—Department of Justice, Washington, D. C., Sanford Bates, U. S. Supt. of Prisons, start work within about 2 weeks on temporary Federal penitentiary, 2500-acre tract at Camp Lee; \$100,000 initial appropriation available; administration bldg., 4 dormitories and bldg. to contain mess hall, kitchen and power plant; all of steel that may be taken down for removal to another site; sewerage and water systems to be installed. 3-20

### Hospitals, Sanitariums, Etc.

Ala., Gadsden—Missionary Servants of Most Blessed Trinity, operating Holy Name of Jesus Hospital, receives bids about April 20 for \$150,000 first unit of \$750,000 hospital; fireproof, Colonial type, rein. conc., struct. steel, brick and tile, comp. roof; 8 and 5 stories, basement and sub-basement and tower; Schmidt, Garden & Erikson, Archts., 104 S. Michigan Ave., Chicago, Ill.; J. P. Burke, Constr. Engr., present address Reich Hotel, Gadsden. 3-27

Ark., Morrilton—St. Anthony Hospital, Rev. F. A. Schwab, member, Bldg. Comm., selected John Rauch as architect for \$45,000 hospital; fireproof, brick and conc., 2 or 3 stories; 30 beds and colored ward; financing; preliminary plans drawn. 1-9

D. C., Washington—Department of Interior, 18th and F Sts., receives bids about June for \$155,000 addition to Freedmen's Hospital; brick, 3 stories; J. Berrall, Archt., Colorado Bldg., 14th and G Sts.

Fla., Miami Beach—St. Francis Hospital, Allison Island, Sister Mary Alice, Mother Superior, will offer \$250,000 6 per cent bonds for additions and improvements to hospital and to liquidate \$200,000 mortgage; additions probably include swimming pool and nurses' home; refrigerating plant.

La., Eunice—Dr. Harry Jenkins and others erect 1-story brick and rein. conc. hospital under supervision of M. L. Vincent, Jr.; wood and tile floors, built-up comp. roof, T shape; Herman J. Duncan, Archt., 120 Murray St., Alexandria.

Mo., Sedalia—City, N. L. Nelson, City Clk., having plans drawn by T. W. Bast, Kahn Bldg., for \$38,000 negro hospital. 2-27

Mo., St. Louis—St. Louis University, Alphonse M. Schuita, S. J., Dean of School of Medicine, selected Study & Farran, Arcade Bldg., as architects for \$1,000,000 Firmin Desloge Memorial Hospital; brick, stone and rein. conc., fireproof. 2-13

N. C., Spruce Pine—Town, J. H. Duncan, Town Clk., plans to soon start work on \$70,000 Duke Municipal Hospital; \$35,000 bonds voted; \$35,000 donated. 2-27

S. C., Columbia—Legislature authorized establishment of tuberculosis sanatorium, Berkeley County; \$15,000 available; Berkeley County probably vote at Democratic primary on \$10,000 bonds. 2-27

S. C., Columbia—South Carolina Baptist Hospital, W. M. Whiteside, Supt.-Treas., erect \$125,000 second unit of H-shape bldg.; 5 stories; outdoor dept. on first floor, 50 private rooms; surgical dept. on fifth floor; equipment, \$25,000. 7-4

Tex., Galveston—Additional contractors estimating on Marine Hospital, bids May 2 by Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C.; W. D. Lovell, 1415 Eighth St., S. E.; Ring Construction Co., 95 S. 11th St., both Minneapolis, Minn.; Virginia Engineering Co., First Natl. Bk. Bldg., Newport News, Va.; C. E. Carson Co., 601 St. Clair St., Chicago, Ill.; Murch Bros. Construction Co., Rwy. Exch. Bldg., St. Louis, Mo.; H. B. Nelson Construction Co., 1034 Broadway, Columbus, Ga.; Standard Construction Co., Inc., Esperson Bldg., Houston, Tex.; Northern Construction Company of Texas, Esperson Bldg., Houston, and St. Paul, Minn.; W. Horace Williams Co., Inc., Southern Bldg., New Orleans, La.; Sumner-Sollitt Co., Natl. Bk. of Commerce Bldg., San Antonio. 4-3

Tex., San Antonio—City, C. M. Chambers, Mayor, votes May 7 on \$150,000 bonds for 100-bed children's annex to Robert B. Green Memorial Hospital. See Building News—Buildings Proposed, City & County. 149

Va., Richmond—Stuart Circle Hospital Corp., Monument Ave. and Lombardy St., probably open bids in midsummer for nurses home; joist and conc.; 3 stories, 78x36 ft., conc. and linoleum floors, conc. foundation, 20-yr. built-up roof; \$80,000; furnishings, equipment, etc., \$15,000; Chas. M. Robinson, Archt.-Engr., Times Dispatch Bldg. 4-3

## Hotels and Apartments

Ala., Tuscaloosa—Marvin Cooper erect \$14,000, brick veneer apartment; C. Morton Ayers, Archt.

D. C., Washington—Methodist Episcopal Bd. of Temperance, Prohibition and Public Morals, First and Maryland Aves., N. E.; apartments on 4 floors of 5-story addition to Methodist Bldg.; J. Lee Wilkinson, Archt., 1007 South Carolina Ave., S. E., Washington, and Falls Church, Va. See Buildings News—Buildings Proposed, Bank and Office.

Fla., Miami Beach—Rudolph Townsend having preliminary plans prepared by Henry J. Maloney, Ingraham Bldg., for \$75,000, 50-room hotel, Washington Ave. and 6th St.

Fla., Pasadena, St., Petersburg—Royalt Hotel erect 50-room addition and swimming pool; \$100,000; Hugh Jay Flynn, Mgr.

Fla., St. Petersburg—F. M. Bittenhouse, 7310 Park St., S. and W. P. Slayton, 225 4th St., N., plan \$1,250,000 hotel, Fourth and Second Ave., north; steel and hollow tile, 500 rooms. 3-27

Fla., St. Petersburg—R. W. Gilmore, 651 Central Ave., plans \$500,000, 6-story, rein. conc. and stucco Hotel Tecumseh, 319 Second Ave., north.

Ga., Atlanta—Dinkler Hotel Co., Carling Dinkler, Pres., has plans completed by G. Lloyd Preacher & Co., Inc., Wynne-Claughton Bldg., and will be released to general contractors early this week (date of receiving bids approx. 2 weeks later) for 20-story Louis Dinkler Hotel, Peachtree and Ellis Sts.; 600 rooms, 104x263 ft., steel and conc., exterior of marble and limestone base with entablature of brick and polychrome terra cotta; 8-story, 100x125 ft. garage in rear of hotel; plans 400-room addition later; Thompson, Holmes & Converse, Assos. Archts., 101 Park Ave., New York. 2-6

Ga., Milledgeville—L. N. Jordan, Chmn. Comm., promoting erection of hotel.

Miss., Greenville—L. A. White purchased Greenville Academy building on Arnold Ave.; enlarge and remodel for apartment; 14 suites; work to be done under supervision E. L. Pearson.

Miss., Jackson—A. D. Oppenheim and J. H. Asher erect \$36,000, 2-story, brick, English type, 15-apartment; Hull & Malvane, Archts., Mercantile Bank Bldg.

Mo., St. Louis—Miss Becker, care Clarence E. Stevens, Archt., 5417 S. Grand Blvd., erect 2-story and basement, 37x73 ft., brick, 8-apartment, 13th and Cherokee Sts.

Tenn., Memphis—J. L. White, Exchange Bldg., erect \$90,000, 3-story, 130x172 ft., brick, 42-apartment, Poplar Ave. and Clark Place; comp. built-up roof, hardwood floors, 48 tile baths, steam heat; plans by owner; bids in.

Tenn., Memphis—I. M. Newman, 1616 Foster St., plans 2-story, 48x40 ft., brick veneer tourist hotel and 1-story, 20x41 ft., conc. block filling station; \$13,000, comp. roof, conc. and wood floors. 3-20

Tex., Beeville—Kohler Hotel Co. ready for bids about April 26 for \$100,000 brick and rein. conc., 50-room annex; Diehlmann & Levy, Archts., State Natl. Bk. Bldg., Corpus Christi.

Tenn., San Antonio—Herbert S. Green, Archt., Alamo Bank Bldg., preparing plans for proposed tourist hotel.

Va., Petersburg—Stark Company, Inc., Paul W. Custer, Pres., plans to start work about May 1 on Molly Stark Apartment, Fillmore and Jefferson Sts.; 72 suites, fireproof.

Va., Roanoke—George McBain, Jr. rebuild Raleigh Hotel damaged by fire at loss \$15,000.

## Miscellaneous

La., Monroe—American Railway Express Co., J. F. Griffin, Local Mgr., erect building.

Mo., Kansas City—A. J. Summe, Pres., Summe Dairy Co., 4113 E. 27th St., and associates, reconstruct Sin-a-Bar Gardens, Highway No. 40 and Blue Ridge Blvd.; extend building and erect 1-story addition; enlarge dancing floor, etc.; A. B. Fuller, Archt., 902 Orear Leslie Bldg.

Okla., Hobart—Hobart Country Club erect clubhouse to replace burned structure.

Tenn., Nashville—National Baptist Publishing Bd., Henry M. Boyd, Sec., 523 Second Ave., N., remodel and erect third-story addition to administration building for R. H. Boyd Memorial Bldg.; \$25,000; 50x170 ft., brick and conc., comp. roof; McKissack & McKissack, Archts., Morris Memorial Bldg. 4-3

Tex., Conroe—Conroe Country Club, A. R. Woodson, Pres., erect \$10,000 clubhouse on Conroe-Montgomery Road.

Tex., Yorktown—Garfield Gun Club, Otto Hengst, Pres., erect hall for dancing and assembly purposes.

## Railway Stations, Sheds, Etc.

Ga., Millen—Georgia & Florida R. R., H. B. Holmes, Ch. Engr., Augusta, considering erecting depot and terminals.

Okla., Tulsa—Tulsa Union Depot Terminal Co., J. E. Hutchinson, Pres., Frisco Bldg., St. Louis, Mo., receives bids April 21 for Union Station for St. Louis-San Francisco Ry. Co., Atchinson, Topeka & Santa Fe Ry. Co. and Missouri-Kansas-Texas R. R. Co. 3-13

Tex., Harlingen—C. S. Kirkpatrick, Ch. Engr., Missouri Pacific Lines, Union Station, Houston, advises that the company does not contemplate erecting passenger station at this time. 3-27

## Schools

Ala., Birmingham—Howard College, O. S. Causey, Athletic Dir., having prepared by E. B. Van Keuren, Inc., Comer Bldg., for \$25,000 1-story, 70x120 ft., brick gymnasium; built-up roof. 3-27

Ala., Mobile—Bd. of Education, W. C. Griggs, Supt., erect \$165,000 physical education building at Murphy High School; 1-story and basement, brick, stone trim, built-up roof; swimming pool, rooms for nurses, doctors, corrective gym., visual education, locker rooms; Warren, Knight & Davis, Archts., Protective Life Bldg., Birmingham; C. C. Yonge, Assos. Archt., Mobile; erect \$20,000 addition to Woodcock School; F. W. Clark, Archt., 4 St. Joseph St., Mobile. 3-27

Ark., Bentonville—Benton County School Bd., F. A. Wood, Supt., erect \$25,000 brick school at Pea Ridge; erect addition to grammar school and remodel present building at Gentry, \$35,000; remodel and erect 4-classroom gymnasium and auditorium addition to school at Decatur, \$15,000.

Fla., Highland City—Polk County Bd. of Public Instruction, T. T. Hatton, Supt., Bartow, plans calling election on bonds to replace auditorium of school previously noted burned.

Ga., Griffin—Spaulding County Bd. of Education, J. P. Manley, Supt., selected Daniell & Beutell, Georgia Savings Bk. Bldg., Atlanta, to prepare plans for school building program; \$125,000 available; brick, stone trim, comp. roof.

Ga., Hamilton—Bd. of Education, C. Norman Cramer, Supt., ready for bids for \$40,000, 1-story and basement, brick, 10-classroom and auditorium school; comp. roof, hardwood floors, steam heat; Daniell & Beutell, Archts., Georgia Savings Bk. Bldg., Atlanta. 20

Ky., Ludlow—Bd. of Education, H. C. Dunham, Clerk, has plans by F. J. Porter, 1714 N. High St., Columbus, Ohio, for 3-story high school on W. Elm St., to include laboratories and manual training shop.

La., Alexandria—Louisiana College, Dr. C. Cottingham, Pres., plans two dormitories.

La., Amite—Tangipahoa Parish votes April 15 on \$25,000 bonds for School Dist. No. 104; W. J. Dunn, Supt. of Schools.

La., Baton Rouge—School Dist. No. 10, W. H. Perkins, Chmn., Bldg. Comm., receives bids April 28 at office of East Baton Rouge Parish School Bd. for \$40,000, 1-story, brick, frame and stone trim Central High School, Sullivan Road and Canal Road in Tenth Ward; separate bids on heating and plumbing; 11 classrooms, rooms for science and home economics, library and study room, comp. and asbestos shingle roof, walls and ceilings of Celotex; Jones, Roessle & Olschner, Archts., Raymond Bldg., Baton Rouge, and Maison Blanche Bldg., New Orleans. 4-3

La., Scotland—Southern University soon ready for bids for 1-story, 139x72 ft., rein. conc. and brick school; 6 classrooms, comp. roof; Favrot & Livaudais, Archts., Hibernia Bk. Bldg., New Orleans.

La., Springville—School Dist. No. 33 votes April 22 on \$25,000 bonds for erecting and improving schools; address Livingston Parish School Bd.

Md., Baltimore—Bd. of Awards, City Hall has low bids from J. Henry Miller, Inc., Eutaw and Franklin Sts., for additions and alterations to present buildings and auditorium building and corridor of Baltimore Polytechnic Institute; at \$881,000 and \$879,700 for completion work in July 1, and February 1, 1931 respectively; annex 3 stories, brick and conc. with separate 1-story auditorium; Chas. M. Anderson, Archt., 9 E. Pleasant St. 3-30

Md., Chevy Chase—Montgomery County School Commrs., E. Broome, Sec., Rockville, soon ready for bids for \$120,000, 3-story, brick elementary school, Valley Place, N. W. and Rosemary St.; H. W. Cutler, Archt., 1800 E St., N. W., Washington, D. C. 1-30

Miss., Decatur—Newton County Agricultural and Jr. College, R. C. Pugh, Supt., ready for bids in about 10 days for 1-story gymnasium and 2-story science and commerce buildings; brick; \$90,000, P. J. Krouse, Archts., M. & W. Bldg., Meridian. 3-6

Miss., Verona—Verona School Dist., D. C. Lawnon, voted \$20,000 bonds for school.

Miss., Walnut Grove—Walnut Grove Consolidated School Dist., T. L. Everett, Supt., voted \$60,000 bonds to rebuild school recently burned. 2-6

Mo., Desloge—Bd. of Education, C. Bryan, Pres., soon ready for bids for erecting addition and remodeling high school; 2 stories, brick; Bonsack & Pearce, Archts., 411 Olive St., St. Louis. 1-30

Mo., Lillbourn—School Bd. plans high school and repairs to grade school; election soon on bonds.

Mo., Marshall—Dr. George H. Mack, Pres., Missouri Valley College, advises that the College does not plan building for some time; building program based solely on College campaign. 3-27

Mo., Moberly—Bd. of Education, B. F. Self, Sec., erect \$300,000, 2-story, brick and conc. Sr. High and Jr. College, Hogan tract, west of Rollins St.; Ludwig Abt., Archt., Reigel Bldg.; bids in. 2-27

Mo., New Madrid—New Madrid Consolidated School Dist. No. 9, H. G. Sharp, Pres., Bd. of Education, ready for bids for \$35,000, 2-story, brick high school; Bonsack & Pearce, Archts., 411 Olive St., St. Louis. 3-6

Mo., Springfield—Bd. of Education, E. A. Barbour, Sr., Pres., soon ready for bids for \$82,000, 2-story, brick Bailey Grade School and \$45,000, 2-story, brick Home Grade

School; Heckenlively & Marks, Landers Bldg., Archt., for former; G. F. Reed, Woodruff Bldg., Archt., for latter; W. B. Ittner, Supvg. Archt., 911 Locust St., St. Louis. 11-14

Mo., St. Charles—Bd. of Education, Dr. T. L. Hardin, Pres., erect 4-classroom, brick Lincoln School, 6th and Perry Sts.; \$50,000. 1-20

N. C., Asheville—Asheville Normal School, Dr. John E. Caifee, Pres., erect \$75,000 Francis Ashbrook Chapman Memorial Library; brick; gift of Mrs. A. L. Ashbrook, Washington, Penn. 1-20

N. C., Charlotte—Chicora College, Columbia, S. C., merged with Queens College, to be known as Queens-Chicora College; united institution will be housed on Queens campus and an additional dormitory will be provided in the near future. 1-20

N. C., Marion—McDowell County School Bd. plans \$12,000 additions and improvements to Glenwood High School. 1-20

Okla., Edmond—Bd. of Education, O. W. Jeffries, Clk., soon ready for bids for completion Edmond High School and erection physical education building; \$45,000; Guy C. Reid, Archt., Oklahoma Savings & Loan Bldg., Oklahoma City. 2-20

Okla., Bartlesville—School Bd., L. A. Rowland, Pres., erect school in Washington Dist.; \$60,000 bonds voted. 1-20

Okla., Seminole—Varnum School Dist. erect \$15,000 addition to school; Albert S. Ross, Archt., Ada; Lauri Bowman, Pres., Seminole County Bd. of Education. 1-20

S. C., Clemson College—J. C. Littlejohn, Bus. Mgr., The Clemson Agricultural College, advises that erection of \$250,000 agricultural building probably be delayed for year. 3-27

S. C., Fort Mill—Fort Mill School Dist. No. 28, Dr. J. B. Elliott, Chmn., Bd. of Trustees, selected Hugh E. White, Gastonia, N. C., to prepare plans for \$75,000, 15-classroom high school; assembly hall to seat 500 people. 3-27

Tenn., Chattanooga—City votes in August on school bonds; probably \$500,000. 3-20

Tenn., Chattanooga—City Bd. of Education, Jas. A. Cash, Chmn., has low bid at \$127,030 from Home Builders' Service Co., 827 Broad St., for 3-story and basement, 175x100 ft., rein. conc., brick and tile Jr. High School for Brainerd Dist.; stone trim, comp. roof; R. H. Hunt Co., Archt., James Bldg. 4-3

Tenn., Johnson City—Bd. of Education has low bid at \$74,974 from Emory Construction Co., Empire Bldg., Knoxville, for Martha Wilder School unit. 3-27

Tenn., Johnson City—Bd. of Education ready for bids in about 2 weeks for additions to Johnson City High School and Langston School on Fairview Ave. 3-13

Tenn., Memphis—Bd. of Education, W. J. Prescott, Pres., has low bid at \$242,308 from S. & W. Construction Co., Shrine Bldg., for Southeast Jr. High School; 3 stories, rein. conc., brick and tile stone trim, auditorium to seat 800 people; E. L. Harrison, Archt., Fidelity Bldg.; plumbing, \$15,650, Pritchard Bros., 433 Madison St.; heating, \$42,300, Fisher Heating Co., 367 Adams St.; has low bid at \$34,400 from Meers & Wallace, 63 S. Third St., for 2-story, brick and stone, 18-classroom addition to Florida St. School; Anker F. Hansen, Archt., Shrine Bldg. 3-27

Tenn., Nashville—David Lipscomb College, Dr. H. Leo Boles, Pres., erect \$100,000 girls' dormitory to replace Avalon Home noted burned. 3-27

Tenn., Nashville—Meharry Medical College, Charles Nelson, Chmn., has low bid at \$1,344,000 from Angle-Blackford Co., American Bk. Bldg., Greensboro, N. C., for three buildings as follows: Nurses Home, 3 stories and basement, 35x144 and 35x53 ft.; boiler house, 2 stories, 51x61 ft.; school and hospital building, 3 stories and basement, 44x123 ft. with 43x90 ft. and 42x78 ft. ell; all fireproof, rein. conc., struc. steel, brick and tile, stone trim, slate and comp. roofs; Gordon & Kaelber, Archts., Rochester, N. Y. 3-13

Tex., Corsicana—School Bd., W. P. McCarmon, Pres., soon call for bids for \$200,000 Jr. High School and several elementary schools and extensions to cost \$75,000; Blanding & Horn, Archts. 12-19

Tex., Dalhart—Dalhart Ind. School Dist. Bd. of Trustees erect \$50,000, 12-room, auditorium and gymnasium, East Ward School; J. Roy Smith, Archt., Blackburn Bldg., Amarillo; soon call vote on bonds. 1-20

Tex., Dallas—Bd. of Education, C. M. Moore, Bus. Mgr., soon let contract for administration building, first unit of Southwest Vocational School in Oak Cliff; 1 story, 200

x 75 ft., with 2 wings 75 x 100 ft. each; brick and tile; Maj. A. E. Wood, City Plan Engr. 1-20

Tex., Fort Worth—Bd. of Education, M. H. Moore, Supt., rebuild M. G. Ellis Grade School in North Fort Worth noted damaged by fire at loss \$20,000. 1-20

Tex., Groesbeck — Ben Hur School Dist., soon vote on \$35,000 bonds for school building; address Limestone County School Bd. 1-20

Tex., Fort Worth—Texas Christian University receives bids April 15 on several units of steel and rein. conc. stadium; total cost \$300,000; Wyatt C. Hedrick, Inc., Archt., First Natl. Bk. Bldg.; following contractors estimating: Thos. S. Byrne, Inc., 712 Ft. Worth Natl. Bank Bldg.; H. B. Friedman, First Natl. Bank Bldg.; Butcher & Sweeney, 806½ Taylor Ave.; Quisle & Andrews, 2212 W. 7th St.; Jas. T. Taylor, First Natl. Bank Bldg.; C. M. Davis, Cotton Exchange Bldg.; B. F. Ball Construction Co., 806½ Taylor St.; all Fort Worth; J. E. Johnson Construction Co., 1000 Franklin Ave., Waco; P. O. B. Montgomery, Construction Industries Bldg., Dallas. 2-27

Tex., Luling—Luling Ind. School Dist., Dr. Clay Nichols, Pres., having plans prepared by Glenn C. Wilson, Milam Bldg., San Antonio, for brick veneer, 8-classroom, gymnasium and cafeteria grade school. 1-20

Tex., San Antonio—Bd. of Education, Dr. J. A. McIntosh, Pres., postponed date opening bids for addition to Robert B. Green School No. 28 (date to be announced later); 4 rooms, assembly hall and cafeteria; J. Clyde & Percy Williams, Archts., Moore Bldg.; W. E. Simpson Co., Engr., Milam Bldg.; Phelps & Dewees, School Archts., Gunter Bldg. 4-3

Tex., San Felipe—San Felipe Ind. School Dist. Trustees, Santos Garza, Pres., erect high school; \$50,000 bonds voted. 1-20

Tex., Seabrook—Seabrook School Dist. Bd. of Trustees, W. M. Day, Pres., erect 1-story, brick and stucco school; \$20,000 bonds voted. 3-20

Tex., Sweetwater—Sweetwater Ind. Dist. School Bd., C. R. Simmons, Pres., receives bids April 21 for \$105,000, 2-story and basement, brick, tile and rein. conc., 20-room Jr. High School; for \$20,000 improvements to Jr. High School; and 1-story, 3-room, brick, tile and stucco negro and Mexican ward schools; \$6000 each; plans from W. R. Griffin, Archt., Levy Bldg. 2-20

Va., Blacksburg—Virginia Polytechnic Institute having plans prepared by C. H. Cowgill, Prof. of Architectural Engineering, for \$150,000, 4-story, 120x30 ft. dairy husbandry building; native stone, brick and tile; rein. conc. floor construction, tar and gravel roof; tile floors, freight elevator, skylights; Wiley & Wilson, Peoples Natl. Bk. Bldg., Lynchburg, repairing plans for plumbing, heating and piping. 1-30

Va., Bridgewater—Bd. of Education plans \$35,000, 2-story, 6-classroom addition to Bridgewater High and Grammar School; plans by Raymond V. Long, State Bd. of Education, Richmond. 1-20

Va., Fredericksburg—State Teachers College soon ready for bids for \$115,000 dining hall; Charles M. Robinson, Inc., Archt., Times-Dispatch Bldg., Richmond. 1-20

Va., Lexington—Virginia Military Institute soon let contract for \$180,000 engineering building. 1-20

Va., Harrisonburg—State Teachers' College, Dr. S. P. Duke, Pres., receives bids April 23 for administration building; contain all of offices, number classrooms, laboratories in physics, chemistry and fine arts and auditorium to seat 1500 people; limestone, fireproof, tile roof; Charles M. Robinson, Inc., Archt., Times-Dispatch Bldg., Richmond. 1-18

Va., Richmond—St. Joseph's Academy and Orphan Asylum, Richmond-Washington highway at Hollybrook, ready for bids about May 1 for \$1,000,000 plant, gift of late James H. Dooley; Hughes & Keegan, Richmond, have contract for laying underground conduits for central heating plant and work in progress, water and sewer connections completed; plans by Carneal, Johnston & Wright, Electric Bldg., call for 15 structures, cottage plan, each 2 stories, fireproof, including chapel, administration building, school house and 11 dormitories for boys and girls, central heating plant. 12-26

Va., Staunton—Bd. of Trustees of Stuart Hall receives bids April 24 at office T. J. Collins & Son, Archts., for erecting several buildings; plans at office architects. 1-30

Va., Williamsburg—College of William and Mary, Dr. J. A. Chandler, Pres., erect \$75-

000 Brown Hall; accommodate 78 students; Charles M. Robinson, Inc., Archt., Times-Dispatch Bldg., Richmond. 1-20

W. Va., Wheeling—Wheeling Ind. Dist. Bd. of Education, C. A. Danford, Clerk, has low bid at \$9853 from John Ernest for remodeling Madison Red Bldg., Broadway and Maryland St., for Jr. High School; F. F. Faris, Archt., 1117 Chapline St. 2-27

## Stores

Ark., Little Rock—Leonard E. Ellenbogen, 915 W. 3rd St., soon ready for bids for \$25,000, 75x140 ft., brick, fireproof, 4-store, 10th St. and Broadway; tile roof. 1-20

Fla., Miami—Forest Park Realty Co., Frank Lowman, 34 W. Flagler St., erect 1-story, rein. conc. and conc. block, stucco store, 62nd St. and 7th Ave.; bids in. 1-20

Fla., Ocala — E. T. Helvenston, Holder Block, remodel Central Bank Bldg.; considering erecting one or 2-story addition. 1-20

Ga., Atlanta—Jas. E. Hickey Investment Co., Richard E. Hickey, Pres., has low bid from Arthur Pew, Jr., Red Rock Bldg., for alterations to 2-story and basement, 110x40 ft., brick and struc. steel, conc. terra cotta trim store, 178-80 Mitchell St., S. W.; E. C. Wachendorf, Archt., Standard Bldg. 4-3

La., New Orleans—Nathan Fischman remodel Model 13-21 Magazine St.; Andry & Feitel, Archts., New Orleans Bk. Bldg.; bids in. 1-20

La., Shreveport—G. Blandino, 525 E. 70th St., erect \$10,000, brick store and residence, Line Ave. and 70th St.; J. P. Annan, Archt., Slattery Bldg. 1-20

Md., Baltimore—John Cook, Inc., 318 N. Charles St., florist, purchased dwelling, 936 N. Charles St., and remodel; architect not selected. 1-20

Mo., Fulton—Mrs. R. S. Cone having plans prepared for \$20,000, 1-story, brick store. 1-20

N. C., Franklin—Will Higdon advises that he does not plan erecting building on site of old Junaluska Inn at present. 4-3

Tex., Houston—Dallas Transportation Co., 817 Bourbon St., Dallas, has contract for excavation for 1-story, 82½x200 ft., brick and conc. store, Orange and Ross Sts., for J. W. Crowdus Realty Co., to be occupied by McKesson Crowdus Drug Co., both 1516 Commerce St.; \$600,000 including site and equipment; Whitson & Roberts, Archts., Sante Fe Bldg. 1-30

Tex., Lockhart—M. Rosenwasser has low bid at \$14,224 from A. Bauhoff for remodeling store and erecting 2-story, hollow tile, brick and conc. annex; wood floors, metal roof; Jeremiah Schmidt, Archt., New Braunfels. 1-20

Va., Richlands—F. F. Hurt erect addition to 2-story brick veneer store and apartment. 1-20

W. Va., Morgantown—O. J. Morrison Department Store Co., W. H. Maddox, Local Mgr., ready for bids about April 15 for \$150,000, 3-story and basement store; 40,000 sq. ft. floor space. 1-20

W. Va., Parkersburg—Pike Investment Co. erect 2-story, stone, brick and metal building to replace recently burned structure. 1-20

## Theatres

Ky., Ashland—Hibernia Securities Co., Inc., Thos. B. Kennair, Hibernia Bk. Bldg., New Orleans, La., having plans prepared by A. S. Graven, 100 N. LaSalle St., Chicago, for \$300,000 theatre and office building. 4-3

Tenn., Memphis—Sam A. Myar, 513 Stonewall St., erect \$75,000 Capitol Theatre, McLemore Ave. and College St.; 164x90 ft., brick, steel and tile, fireproof, built-up roof; seat 750; 6 stores in connection; Claude Northern, Archt., Fidelity Bk. Bldg. 1-20

## Warehouses

Ark., Rogers—Standard Oil Co., Edgar McBryde, Local Mgr., erect warehouse and other buildings for distributing point. 1-20

Okla., Oklahoma City—C. L. Monnot, Perrine Bldg., ready for bids for \$100,000, 4-story, 100x140 ft., brick and rein. conc. warehouse; Brown & Myers, Struc. Engrs., Petroleum Bldg. 1-20

Tex., Yoakum—Highway Coms., R. S. Sterling, Chmn., Austin, erect \$14,000 fireproof warehouse, West and Huck Sts. 1-20

## BUILDING CONTRACTS AWARDED

## Association and Fraternal

Ark., Malvern—Rockport Lodge No. 58, F. & A. M., has broken ground for \$10,000 office bldg. and banquet hall annex to temple; brick, 2 stories, 30x50 ft., hardwood floors, tar and gravel built-up roof; address proposals on furnishings, equipment, etc., \$1000, to Ray Boyle, Sec., Malvern; C. L. Thompson, Archt., Hall Bldg., Little Rock. See Want Section—Building Material and Equipment. 4-3

Md., Baltimore—Scottish Rite Holding Co., J. Edw. Richardson, Pres., 19 E. Baltimore St., let contract to Price Construction Co., Maryland Trust Bldg., for \$1,000,000 temple, Charles St. Ave. and 39th St.; Italian Renaissance type, limestone, 4 stories, 175x175 ft., marble and conc. floors, copper roof; Clyde N. & Nelson Friz., Archts., Lexington Bldg., Baltimore; John Russell Pope, Consult. Archt., 542 Fifth Ave., New York; Chas. L. Reeder, Mech. Engr., 918 N. Charles St.; C. H. Osborne, Struct. Engr., 222 W. Franklin St., both Baltimore. 12-19

Md., Baltimore—Following sub-contracts let on \$650,000 Y. M. H. A. bldg.: Excavation, Timothy Bresnan & Son, 2018 W. North Ave.; cement, Maryland Lime & Cement Co.; steel and iron, Dietrich Bros., 220 Pleasant St.; stone work, Jas. O'Meara, Frisby and Belt Line R. R.; brick work, Koyne & Weber, 435 N. Front St.; firedoors, Wm. E. Gambrill & Co., 213 East St.; metal windows, Campbell Metal Window Corp., Bush and Hamburg Sts.; lumber, James Lumber Co., 921 Allegheny St.; plumbing, Lloyd E. Mitchell, 915 Monument St.; painting, Farber-Burgess Co., 105 W. Saratoga St.; plastering, Coleman & Riley, 4311 Miami Pl.; roofing and Celotex, Wm. E. Cotton & Co., Inc., 1525 Lamont Ave.; hardware, Hubbard & Eggleston, 120 W. Baltimore St.; marble, Jos. B. Dunn & Sons, Inc., 853 N. Howard St., all Baltimore; rein. steel, Kalman Steel Co., Chicago, Ill.; steel sash, David Lupton's Sons Co., 2263 E. Allegheny Ave., Philadelphia, Pa.; millwork, Herman Maas' Sons Co., Inc., York, Pa.; hollow metal work, United Metal Products Co., Canton, O.; metal casement windows, Henry Hope, Holyoke, Mass.; Tyrono doors, Compound Tyrono Door Co., St. Joseph, Mich.; glass and glazing, Hires Turner Glass Co., 30th and Walnut St., Philadelphia, Pa.; Jos. Evans Sperry, Archt., Calvert Bldg., Baltimore; Frank E. Hahn, Consult. Archt., 629 Chestnut St., Philadelphia; Chas. L. Reeder, Mech. Engr., 918 N. Charles St.; Frainie Bros. & Haigley, Contr., 20 W. Franklin St., both Baltimore. 12-12

## Bank and Office

Ga., Atlanta—Citizens & Southern National Bank, W. B. Spann, Vice-Pres., Marietta and Broad Sts., let contract to Southern Ferro Concrete Co., 70 Ellis St. N. E., for alterations and additions to bldg.; prices have been asked for 5 new elevators, other plans and specifications still in hands of Hentz, Adler & Shutz, Archts., Candler Bldg.; fireproof, 14 stories and basement, rein. conc. struct. steel, brick and tile, limestone trim, built-up roof. 3-6

Md., Baltimore—Additional sub-contracts let on 12-story Baltimore Life Insurance Co. bldg., on which steel work is going up; setting rein. steel, M. Torre, 2328 E. Fayette St., conc. and cement work, R. S. Green, Inc., 3232 Frederick Ave.; plumbing and elect. work, Riggs-Distler Co., Inc., 216 N. Calvert St.; heating and ventilating, Enterprise Steam & Hot Water Heating Co., 619 W. Franklin St.; painting, J. G. Vallant Co., 224 Charles St.; acoustical treatment, Johns-Manville, Inc., Munsey Bldg.; roofing and sheet metal, John O. White, 100 N. Franklin-town Rd.; steel erection, Harford Erection Co., 2341 Harford Ave.; hollow metal work, United Metal Products Co., Canton, O.; marble, Gray-Knox Marble Co., Dandridge Pk., Knoxville, Tenn.; orn. iron, Macour Iron Works, Long Island City, N. Y.; bronze work, Ellison Bronze Co.; casement French windows, International Casement Co.; hollow metal, Jamestown Metal Equipment Co., all Jamestown, N. Y.; brick work, D. C. Butcher, 3400 K St., N. W.; linoleum and cork tile, Baker Cork & Tile Co., 1700 Eye St., N. W., both Washington, D. C.; granite, Stone Mountain Granite Co., Healey Bldg., Atlanta, Ga.; millwork, Robt. Mitchell Manufacturing Co., Second & John St., Cincinnati, O.; glass and glazing, Pittsburgh Plate Glass Co., Grant Bldg.; steel inspection, R. W. Hunt Co., Professional Bldg., both Pittsburgh, Pa.; Mottu & White, Archts., 527 N. Charles St.; J. Henry Miller, Inc., Eutaw and Franklin Sts., gen contractor at about \$650,000, both Baltimore. 1-30

Mo., St. Louis—Lowell Bank, Wm. Koeneman, Pres., let contract to J. F. Rupp Building & Contracting Co., 1901 E. Warne Ave., to remodel and erect brick addition; bank fixtures, Prudential Fixture Co., 2000 Chouteau Ave.; Wedemeyer & Nelson, Archts., Wainwright Bldg. 4-3

Tex., Dallas—McNeny & McNeny, Athletic Club Bldg., let contract to Henger & Chambers, Dallas Natl. Bank Bldg., for \$1,000,000 Tower Petroleum Bldg., Elm and St. Paul Sts.; 22 stories, about 108x60 ft., first 2 floors granite, face brick and terra cotta above, 4 high-speed signal control elevators; set-back type; Mark Lemmon, Archt., Constr. Industries Bldg. 4-3

## Churches

Ga., Atlanta—Following contracts let on \$250,000 synagogue for Hebrew Benevolent Congregation: Face brick, Old Virginia Brick Co., Salem, Va.; rein. steel and steel sash, Southern G-F Co., 263 Decatur St., S. E.; limestone, Capital Stone Co., 214 Ferry St., S. E.; stripping, Chamberlain Metal Window Strip Co., 94 Fairlie St., N. W.; plastering, Atlanta Plaster Co.; tile, terrazzo and marble, Caldwell Marble & Tile Co., Red Rock Bldg.; metal and tin clad doors and frames, Luke Sewell, 144 Spring St., N. W.; cork and linoleum floors, Dan E. Kennedy; sheet metal, Claude A. McGinnis Co., 136 Kleg St., N. E., all Atlanta; misc. iron and steel and struct. steel, Decatur Iron and Steel Co., Decatur, Ga.; millwork and trim, Gresham Manufacturing Co., Griffin, Ga.; finished hardware, J. M. Tull Rubber & Supply Co., 285 Marietta St., N. W., and Corbin Hardware Co., New Britain, Conn.; dampproofing, Toch Bros., Inc., 443 Fourth Ave., New York; Hentz, Alder & Shutz, Archts., Candler Bldg.; Robt. S. Fliske, Consult. Engr., Healey Bldg.; Griffin Construction Co., Contr., 452 Spring St., all Atlanta; roofing contract not yet let. 3-13

Ky., Russell—First Baptist Church, Main and Belfont St., let contract at \$15,973 to J. H. Pennington, Etna St., for brick bldg.; 3 stories, 50x42 ft., conc. foundation, comp. roof; address proposals on furnishings, equipment, etc., \$10,000, to John R. Gilpin, 305 Main St.; Clell Haves, Archt., Amanda St. See Want Section—Building Material and Equipment. 4-3

Miss., Magnolia — Friendship Baptist Church erect \$10,000 bldg.; W. W. Easley, Contr. 4-3

Mo., St. Louis—St. Andrews R. C. Church, Rev. Albert Mayer, Pastor, 307 Hoffmeister Place, let contract to Hercules Contracting Co., Wainwright Bldg., for brick, stone and terra cotta church: 1 story and basement, 81x110 ft.; also 1-story, 31x41-ft. boiler house; Adolph F. Stauder, Archt., 3608 Gravois St. 12-5

S. C., Clover—Presbyterian Church erect \$50,000 bldg.; conc. footings, brick, 2 stories, comp. roof; Hugh E. White, Archt., Gastonia, N. C. 4-3

Tex., Kerrville — Protestant Episcopal Church let contract to McCreary & Schott, Kerrville, at about \$30,000 for bldg.; natural stone, L shape, 1 story, 75x85 ft., slate roof; Atles B. & Robt. M. Ayres, Archts., Smith-Young Tower; W. E. Simpson Co., Engr., Milam Bldg., both San Antonio. 3-6

## City and County

Miss., Greenwood—City let contract at \$71,500 to Howell Bros. Construction Co. for city hall; rein. conc. brick, terra cotta trim, 2 stories, 93x109 ft.; Robt. J. Moor, Archt., both Greenwood; Gardner & Howe, Engrs., Portier Bldg., Memphis, Tenn. 3-20

Tex., Pampa—City let contract at \$106,903 to John T. Glover for city hall, Albert Square; fire station contract at \$24,241 to Plains Construction Co.; steel frame, rein. conc., fireproof, 2 stories and basement, terrazzo and conc. floors, conc. foundation, 20-yr. guar. comp. roof; furnishings and equipment for city hall, \$8000; W. R. Kaufman & Son, Archts.-Engrs., Box 1635. 3-20

## Dwellings

Ala., Birmingham—G. F. Elliot, 6808 Second Ave. S., let contract to J. F. Adams, 901 Cotton Ave., for brick veneer residences; 2 stories, oak floors, conc. or brick foundation, comp. shingle roof; Miller & Martin, Archts.; J. A. Lewis, Engr., both Title Guar. Bldg. 3-27

Ala., Jasper—W. Long erect \$15,000 residence; brick veneer, 2 stories, 31x44 ft., comp. roof, steam heat; Chas. H. McCauley, Archt., Jackson Bldg.; owner builds. 4-3

D. C., Washington—W. C. & A. N. Miller, 1119 17th St., N. W., have permit for \$12,000 dwelling, 4422 Garfield St., N. W.; brick, 2 stories and attic; also for \$10,000 dwelling, 4315 Hawthorne St., N. W.; brick, 3 stories; owners build. 3-27

Fla., Coconut Grove, Miami—Mrs. F. J. Sarmiento let contract to John B. Orr Construction Co., 147 N. E. Sixth St., Miami, for \$35,000 residence and garage; rein. conc., conc. block and stucco, tile floors, tile roof, conc. foundation; P. E. Paist and Harold D. Stewart, Archts.; Maurice Connell, Engr., both Art Center Bldg., Coral Gables. 3-27

Fla., Miami Beach—N. L. Nathanson erect \$100,000 residence; Tropical Homes Co., Contr., Lincoln Rd. 4-3

Ga., Atlanta—H. Rosenberg, 452 Bedford Place, N. E., erect 3-brick veneer dwellings, 505 Maryland Ave., S. W., and 1181-83 Stewart Ave., S. W.; 1 story and basement, comp. shingle roof; \$10,500; owner builds. 3-27

Ga., Atlanta—Mack Evans, 565 Langhorn St., S. W., erect \$12,500 residence, 22 Woodcrest Ave.; hardwood and tile floors, comp. shingle roof, 2 baths, steam heat; \$12,500; owner builds. 3-27

Ga., Atlanta—S. D. Grant, care Marmon-Atlanta Co., 512 W. Peachtree St., N. W., erect \$15,000 residence, Northwood Drive, Haynes Manor; brick veneer, 2 stories and basement, hardwood and tile floors, tile roof, steam heat; day labor. 3-27

Ga., Atlanta—Mrs. H. G. Barrett erect \$20,000 residence; brick, conc. footings, 2 stories and basement, hardwood and tile floors, slate or tile roof, steam heat; National Engineering & Constructing Co., Contr., Masonic Bldg. 3-27

La., New Orleans—O'Neill Labeaud, Contr., 3336 Annette St., alter and erect addtions to dwellings. 4-3

Md., Baltimore — Dr. Jas. H. Ferguson, Medical Arts Bldg., let contract to Clarence L. Jarvis, 3604 Woodbine Ave., for \$12,000 residence, 4002 St. Paul St.; stone, 2 stories, 40x44 ft., garage 18x20 ft., slate roofs, hot water heat; Fredk. Thos., Archt., 726 N. 33rd St. 3-27

Md., Baltimore—Jas. T. Barker, 2204 W. Saratoga St., erect 4 brick dwellings, 2213-19 W. Saratoga, after plans by Chas. W. McKewin, Archt., 2814 Harford Rd., 2 stories, 14.11x44 ft., Carey roofs, steam heat; \$12,000; owner builds. 4-3

Md., Baltimore—B. Kleiman, Bldr., Anoka Ave., & Reisterstown Rd., erect 10 brick dwellings, 2301-19 Anoka Ave.; 2 stories, 20.11x46 ft. and 21.4x49 ft.; 18.10x19-ft. garages; Carey roofs; \$30,000; plans and constr. by owner. 3-27

Md., Baltimore — Chas. Louviere, Contr., 510 S. Hennessy St., erect duplex, Lakeview. 3-27

Md., Baltimore—Inter-City Co. erect 3 frame dwellings, 4801-05 Edgar Terrace; 2 1/2 stories, 24 x 24 ft., steam heat; \$10,000; Benj. R. Sale, Contr., 4311 Arizona Ave. 3-27

Md., Baltimore—A. G. Christie erect \$10,000 residence and garage, 211 Tunbridge Rd.; 2 1/2 stories, 39x34.10 ft., slate roofs, vapor heat; E. H. Glidden, Jr., Archt., American Bldg.; C. K. Wells, Jr., Contr., 3538 Old York Rd. 3-27

Md., Baltimore—John Welsh, 11 E. Fayette St., erect 18 brick dwellings and garages, 3500 block Lynchester Ave., after plans by Geo. Wessel, Archt., 601 W. 40th St.; 2 stories, 20x30 ft. and 10x18 ft., slag roofs; \$90,000; owner builds. 3-27

Md., Baltimore—John Welsh, 11 E. Fayette St., erect 18 brick dwellings, 3300 block Lawn View Ave.; 2 stories; \$50,000; Geo. Wessel, Archt., 601 W. 40th St.; owner builds. 3-27

Md., Baltimore—John E. DeFord erect \$24,000 residence, 5412 St. Albans Way; 2 1/2 stories, 44 x 47 ft., slate roof; Laurence Hall Fowler, Archt., 347 N. Charles St.; Thos. Hicks & Son, Inc., Contr., Charles St. and Stratford Rd. 3-27

Md., Baltimore—Harry Michel, Calvert Bldg., erect 3 brick dwellings and garages; 1 1/2 stories, 26 x 28 ft., slate roofs; \$14,000; Geo. Wessel, Archt., 601 W. 40th St.; owner builds. 3-27

Md., Baltimore—Frank Novak Realty Co., Gunther Bldg., erect 8 brick dwellings and garages, 1300-14 E. 33rd St., 2 stories, 50 x 47 ft. and 24 x 47 ft., slate roofs, hot water heat; \$50,000; G. F. Smithson, Archt., 1212 N. Central Ave.; owner builds. 3-27

## CONSTRUCTION DEPARTMENT

## Manufacturers Record

Md., Baltimore—Henry Kolb, Inc., erect 7-room shingle cottage, 7 W. Elm Ave., Overlea Manor, Belair Rd.; Henry Kolb, Inc., Contr., Belair Ave. & Bel Air Rd.

Mo., Clayton, St. Louis—Edw. Berg, 2814 Victor St., erect \$10,000 residence, 6321 Alamo St.; brick, 2 stories, 30x34 ft., conc. foundation, tile roof, hot water heat; Fred Scheporek, Archt., 5920 Wainwright St.; owner builds.

Mo., Jefferson City—J. T. Waddill, 303 W. Atchison St., erect \$10,000 brick residence, Greenberry Rd.; 1½ stories and basement, 34x37 ft., hardwood finish and floors, tile bath, hot air heat, comp. roof; Schwartz & Stark, Contrs., 321 W. Commercial St.

Mo., Jefferson City—Geo. Linhardt, 122½ E. High St., erect brick or stucco residence, Walinka Place; Spanish type; day labor.

Mo., St. Louis—J. H. Sewing, 6329 W. Florissant St., erect \$12,000 office and tenement bldg., 5440-44 W. Florissant; 2 stories, 35 x 53 ft., tile roof, hot air heat; A. J. Mayer, Archt., 3530 Humphrey St.; J. Rupp Building & Contracting Co., Contr., Warne and Conde Sts.

Mo., St. Louis—M. Taylor erect 2 brick dwellings, 3193 Watson St. and 6301 Scanlan St.; 2 stories, 25 x 30 ft., asbestos shingle roofs, hot air heat; \$10,000; H. Hardt, Archt.-Contr., both 3117 Watson St.

Mo., St. Louis—John C. Greulich Realty & Investment Co., 3111 N. Grand St., started work on first 10 of 50 bungalows, to be erected in Ingleside No. 1 sub-division during 1930.

Mo., St. Louis—Chas. Kist, 4225A S. Grand Blvd., erect 2 brick dwellings, Benton Ave., Hegge Hills; 1 story and basement, 28 x 28 ft., hardwood floors, tile baths, comp. shingle roof, hot air heat; \$10,000; work by sub-contract.

Mo., St. Louis—G. Winkler, 4011 Floral St., erect \$10,000 brick residence, 4046 Kingshighway, S. W.; 1 story and basement, 27 x 47 ft., tile bath, hardwood floors, slate roof, hot air heat; Ollie C. Garber, Contr., 4315 Kingshighway, S. W.

Mo., St. Louis—Albert E. Black, 3808 Cas-tleman Ave., 803 Louderman Bldg., erect brick residence, Clermont Lane and Ladue Rd.; 2 stories and basement, marble, tile and terrazzo work, hardwood floors, showers, oil or gas burner heat; LaBeaume & Klein, Archts., Compton Bldg.; work by sub-contract.

Mo., St. Louis—Gast Realty Co. erect 2 brick dwellings, 911-15 Hornsby St.; 1 story and basement, 24x40 ft., hardwood floors, tile baths, comp. shingle roof, hot air heat; \$10,000; W. H. Harting, Contr., both 5349 Janet Ave.

Mo., St. Louis—J. C. Lamping, 3861 Delor St., erect 2 brick dwellings, 4266-70 Gertrude Ave.; 1 story and basement, 27x39 ft., tile bath, hardwood floors, comp. shingle roof, hot air heat; \$10,000; work by sub-contract.

Mo., University City, St. Louis—B. W. Stinson, care Chas. R. Greene, Archt., Wainwright Bldg., erect brick residence, University Park; 2 stories and basement, 32x32 ft., hardwood floors, slate roof, tile and Vitrolite bath, copper sheet metal work, hot water heat; work by sub-contract.

Mo., Webster Groves—C. R. Comfort, 215 N. Gore St., erect \$13,000 frame residence; 2 stories, 54x30 ft.; Dan Mullen, Jr., Archt., 18 N. Meramec St., Clayton; Koester Bros., Constrs., 2835 Laclede Rd., Maplewood. 3-6

Mo., Webster Groves, St. Louis—Chas. Kreutzer, 1041 S. Taylor Ave., erect \$10,000 brick residence, 334 Marion Ave.; 2 stories and basement, 28x30 ft., tile bath, hardwood floors, comp. shingle roof, hot air heat; Sidney Stokes, Contr., 6201 Wade Ave.

N. C., Rocky Mount—A. T. Thorpe erect residence; contract let.

N. C., Rocky Mount—R. D. Gorham erect \$70,000 residence; contract let.

N. C., Winston-Salem—Mrs. Theo. Horton completed foundation for \$20,000 residence, Buena Vista; 2 stories, 44 x 86 ft., oak floors, slate roof; Northup & O'Brien, Archts.; W. H. Fetter Co., Contr., both Reynolds Bldg.; plumbing and heating not in gen. contract.

Okla., Oklahoma City—C. F. Lyons, Bldr., 303 E. 16th St., erecting brick bungalow Avondale Drive, Nichols Hills; Byron Knight erecting brick bungalow, Wilshire Blvd., Nichols Hills.

Tenn., Memphis—M. Fred Deutsch, 27 N. Claybrook St., let contract to R. X. Morris, 2204 Cowden St., for brick veneer and cast stone residence; 1½ stories, 60x31 ft.; hardwood floors, tile roof; H. J. Kemer, Archt., 1756 Vinton Ave. 3-27

Tenn., Memphis—G. W. Davis, 1883 Young Ave., erect brick veneer and stone duplex, Stonewall St.; 2 stories, 54x27 ft., tile baths, hardwood floors, comp. roof; R. L. Sieg, Archt., First Natl. Bk. Bldg.; L. C. Walker, Contr., 975 Forrest Ave.

Tex., Amarillo—Miles Bivins, 1001 Tyler Ave., erect \$50,000 residence, W. 16th Ave., near Rusk St., Bivins Addition; English type, brick, stucco and half timber; excavating.

Tex., Corpus Christi—Mrs. M. P. Burke, Shell Rd., erecting conc. and brick veneer residence, Shell Rd.; L. A. McNatt, Contr.

Tex., Houston—E. H. Fleming Co., 2139 Sunset Blvd., M. G. Worrall, Mgr., Bldg. Dept., erect number dwellings, Southampton; 3 under constr. on Quenby Rd. and 1 on Wroxton Rd. 3-27

Tex., Houston—Abijah M. Thompson, Sales Mgr., Mosehart-Schleeter Co., let contract to Johnson & Gustavson for \$15,000 residence, Bolsover and Shepherd Sts., Southampton; work started.

Tex., Houston—B. W. Holtz, 1214 Bark-dull St., completed foundation for \$22,000 dwelling, 2222 Inwood Drive; brick veneer, 2 stories, 30x52 ft., wood "Rustics" shingle roof; plans and constr. by owner.

Tex., Luling—L. L. Allen erect \$17,000 residence; struct. clay tile and stucco; David C. Donalson, Archt.; A. A. Zunker, Contr., both San Marcos.

## Government and State

D. C., Washington—Following sub-contracts let on \$250,000 reptile house, National Zoological Park: Rein. steel, Concrete Steel Co., 2539 Pa. Ave., N. W.; excavation, M. J. Dugan; elect. work, L. T. Washington, 1486 Meridian Ave., N. W.; sheet metal work, P. F. Branstedt, 1006 Wisconsin Ave., N. W.; promenade tile and membrane waterproofing, Ironclad Roofing Co.; steel windows, Detroit Steel Products Co., Barr Bldg.; painting, Edw. W. Minte Co., 1213 12th St., N. W.; finishing hardware, Rudolph & West Co., 1332 N. Y. Ave., N. W.; struct. steel erection, Heron Todd Construction Co.; misc. metal work, Fred S. Gichner, 1214 D St., N. W.; interior marble, tile, terrazzo and slate, Columbia Mosaic & Tile Co., 114 C St., N. W.; glass and glazing, Pittsburgh Plate Glass Co., 4th and Channing St., N. E.; all Washington; struct. steel, Pennsylvania Fabrication Co., Verona, Pa.; brick and terra cotta, Jos. L. Booze & Co., 12 W. Madison Ave.; tile roof, Edw. G. Flick & Co., 2008 Harford Rd.; bonding coat, Wm. F. Zeller Co., 613 W. Cross St.; dumbwaiters, Warsaw Elevator Co., 111 Mercer St., all Baltimore, Md.; millwork, Oxford Millwork Co., Oxford, Pa.; exterior granite and marble cut stone work, McLeod & Romberg Stone Co., Bladensburg, Md.; skylights, David Lupton's Sons Co., 16th and Walnut Sts., Philadelphia, Pa., through Walter S. Brauns, 509 N. Charles St., Baltimore; waterproofing (compound), Western Waterproofing Co., Liberty Trust Bldg., Philadelphia; metal covered doors, E. H. Friedrich Co., through Consolidated Supply Co., 10 W. Chase St., Baltimore; structure, conc., brick and cut stone, 2 stories and basement, 193x90 ft., tile and terrazzo floors, conc. foundation, promenade tile, Spanish tile and slag roof; address equipment proposals to District Commr., District Bldg.; plans by A. L. Harris, Municipal Archt., District Bldg., Washington; North-Eastern Construction Co., Contr., 6 W. Madison St., Baltimore; foundation started.

Ga., Fort Benning—Following sub-contracts let on 26 officers' quarters and 15 non-commissioned officers' quarters: Excavation, J. G. Roberts, West Point, Ga.; elect. work, Walker Electric & Plumbing Co., 111 12th St., Columbus, Ga.; plumbing and heating, Anderson Plumbing Co., 207 Dexter Ave., Montgomery, Ala.; hauling and drayage, Tharp Transfer Co., Montgomery, Ala.; following material contracts let: rein. steel, Connors Steel Co., Empire Bldg.; reinforcing specialties, Concrete Steel Co., 1009 5th Ave., S.; Portland cement, National Cement Co., Brown-Marx Bldg.; Magnolia cement, Southern Cement Co., American Trust Bldg., all Birmingham, Ala.; lumber, Betty & Sons Lumber Co., Vandiver Bldg., oak flooring, Vesuvius Lumber Co., 520 Bell St., both Montgomery, Ala.; brick, Associated Brick Companies; tile, Columbus Brick & Tile Co., 5th St.; sand, Wardlaw Sand & Gravel Co., Glade Rd., all Columbus; Algernon Blair, First Natl. Bank Bldg., Montgomery, Ala., gen. contract at \$407,548. 2-27

Md., Jessups—Bethlehem Fabricators, Inc., Bethlehem, Pa., have contract for 185 tons struct. steel for \$150,000 remodeling work, Maryland House of Correction; misc. iron, Potts Manufacturing Co., Mechanicsburg,

Pa.; H. G. Peering, Supvg. Engr., Court Square Bldg.; Davis Construction Co., Contr., 9 W. Chase St., both Baltimore, Md. 4-3

## Hospitals, Sanitariums, Etc.

Ga., Atlanta—O'Pry Heating & Plumbing Co., 163 Cotton Ave., Macon, has mechanical equipment and incinerator contract at \$32,547 for U. S. Veterans Hospital.

N. C., Henderson—Jubilee Hospital for Negroes started work on \$16,000 tuberculosis ward annex; Eric G. Flannagan, Archt.; M. L. Wood, Contr.

Okla., Oklahoma City—Dr. W. H. Williamson let contract to Jack Gill, 209 W. 14th St., for \$10,000 hospital; brick and rein. conc. 3 stories and basement, conc. floors, steam heat; Layton, Hicks & Forsyth, Archts., Braniff Bldg. 3-13

## Hotels and Apartments

Ala., Mobile—C. P. Tampany, 33 N. Kedz Ave., Chicago, Gen. Contr. for \$2,000,000, 33-story, 500-room hotel for Malbis Hotel Co., Jason Mabis, Pres., soon ready for sub-bldgs.; struc. steel frame, brick and tile walls, granite and limestone to 5th floor; Henry J. Apfelbach, Archt., 840 Michigan Ave., Chicago. 11-7

Ga., Atlanta—J. G. Hamm, 68 Hunter St., S. W., started excavation for \$40,000, 2-story and basement, brick veneer, 12-apartment, Greenwood and Ponce de Leon Place, N. E.; hardwood and the floors, steam heat; owner builds.

Ky., Horse Cave—Clarence Owens has contract for 4-story tourist hotel; foundation completed.



Miss., Greenwood—M. K. Weller let contract to S. G. Beaman for 4-apartment on W. Market St.; R. J. Moor, Archt.

Mo., University City, St. Louis—Joseph Berger, 910 Lucas Ave., erecting \$25,000, 2-story, 36x80 ft., brick apartment, 6238 Pershing Ave.; Gale E. Henderson, Archt., Arding Bldg., supervising construction.

Okla., Oklahoma City—R. C. Mitchell, 121 East A St., started work on \$16,000, 2-story and basement, 38x49 ft., brick veneer apartment; owner, Archt.-Bldr.

Okla., Oklahoma City—Oklahoma Biltmore Hotel Co., C. F. Colcord, Pres., 421 West 13th St., floated \$1,500,000 loan to complete financing of \$4,000,000 hotel and garage; 25 stories, 1000 guest rooms; garage 8 stories; both brick and conc., comp. roofs, conc. floors; Reinhart & Donovan, Gen. Contrs., Commerce Exchange Bldg.; Hawk & Parr, Archts., First Natl. Bk. Bldg. 11-21

Tex., San Antonio—Mrs. V. L. Baldwin let contract to W. H. Biggers for three 2-story, 4-apartments on North Beach.

## Miscellaneous

Ark., Little Rock—Saul S. Harris, 221 Ridgeway Ave., started work on community center, Prospect Ave. and Spruce St., including 8 stores and filling station; brick, tile roof, stores 20x65 ft.; McGregor & Pickett, Contrs., 6th and Center Sts.; Erhart & Eichbaum, Archts.

D. C., Washington—University Club, G. F. Snyder, Pres., 810 Eighteenth St., advises having preliminary plans prepared for addition for future; nothing definite.

Fla., Miami Beach—The Surf Club, Alfred I. Barton, Sec., Hampton Arcade, Lincoln house, restaurant, cabanas, swimming pool, Road, ready for bids in few days for club-locker rooms, etc.; \$500,000; Russell T. Panoast, Archt., 1139 Lincoln Road. 4-3

Fla., St. Petersburg—C. Perry Snell, Inc., 4th St. and Center, soon start work on Venetian swimming pool adjoining club-house; also erect dining room and kitchen addition; \$45,000; Bob Cribbet, Contr.

Ky., Horse Cave—Clarence Owens has contract for annex and 1-story addition to Midway Cafe.

La., Marrero—Hyman Rabinovitz, 740 Poydras St., New Orleans, has contract for 1-story, brick and stucco gymnasium building for Hope Haven.

Mo., St. Joseph—East Hills Golf Club, H. W. Tilden, Pres., 516 N. 29th St., let contract at \$25,000 to Sam Hotchkiss, 1709 Perrin Ave., for 1-story, 30x160 ft. clubhouse on E. Faron St.; tile roof, conc. floors; Walter Boshen, Archt., Tootle Lacey Bk. Bldg. 4-3

Tenn., Memphis — Mid South Fair, Inc., Harry Baker, 3041 Grand Central Terminal, New York, soon start work on \$50,000, 1-story, 98x160 ft., frame and stucco ball room at Fair Grounds, East Parkway and Central Ave.; owner builds.

Va., Virginia Beach — Cavalier Golf Club let contract at \$16,919 to C. Q. Nugent, Law Bldg., Norfolk, for first unit of clubhouse on Cavalier Hotel golf course on Birdneck Point; brick and stucco; Neff & Thompson, Archts., Seaboard Bk. Bldg., Norfolk. 4-3

### Railway Stations, Sheds, Etc.

Mo., Boles — Missouri Pacific R. R., E. A. Hadley, Ch. Engr., Mo. Pacific Bldg., St. Louis, let contract to J. C. Duncan, 4219a Botanical Ave., St. Louis, for 1-story, 18x46 ft., stone passenger stations at Boles, Gray Summit and Labadie; E. M. Tucker, Archt., Mo. Pacific Bldg., St. Louis. 1-23

Mo., Labadie — See Mo., Boles.

### Schools

Ala., Mobile — Bd. of Education, W. C. Griggs, Supt., let contract at \$16,570 to F. D. Kimbrough for 5-classroom addition to Crichton School; F. W. Clark, Archt., 4 St. Joseph St. 1-30

Ark., Beebe — Bd. of Trustees, Junior Agricultural College, E. B. Abindson, Chmn., Bldg. Comm., let contract to D. C. Abington & Co. for \$20,000, 2-story, 40x115 ft., brick building for classrooms and boys' dormitory; Durward F. Kyle, Archt., Natl. Bank Bldg., Pine Bluff. 4-3

Ark., Hector — Pope County School Bd., Tom J. Bullock, Supt., Russellville, let contract at \$10,500 to Nelson & Woodson, Russellville, for brick veneer, 8-classroom and auditorium school at Hector; at \$4994 to Hamilton & Gordon, Morriston, for brick veneer 4-room and auditorium school at Scottsville. 3-27

Ga., Rome — Bd. of Education erect 4-room brick veneer addition to Rome Grammar School; comp. roof, wood floors; Lockwood & Poundstone, Archts., and Edw. F. Billie, Asso. Archt., both Marietta Bldg.; owners probably build, day labor.

Mo., Bismarck — Bd. of Education, Mrs. C. L. Kistner, let contract to O. L. Hines for 2- and 3-story, 78x83 ft., brick and rein. conc., 6-classroom, auditorium and gymnasium school; wood floors, built-up roof; Bonsack & Pearce, Archts. 411 Olive St., St. Louis. 4-3

Mo., Campbell — School Bd. let contract at \$55,921 to John J. Miller, Illino, for school.

Mo., St. Louis — Washington University, Geo. R. Throop, Chancellor, and W. McKim Marriott, Dean, School of Medicine, let contract to Dickie Construction Co., Louderman Bldg., for \$400,000, 11-story and basement, 95x72 ft., brick and rein. conc., fireproof Radiology Institute; Jamieson & Spear, Archts., Arcade Bldg. 3-6

Mo., St. Louis — Holy Cross Catholic Church, Rev. Anton Wigger, 8115 Church Road, let contract to C. A. Weisch Construction Co., DeMenil Bldg., for 2-story and basement, 56x78 ft., brick and rein. conc., fireproof school with 2-story, 20x30 ft. garage attached; Wm. L. Jackson, Archt., Bud-er Bldg. 3-6

N. C., Canton — Bd. of School Comms. let contract at \$49,000 to Phillips Construction Co., Waynesville, for two 1-story and base-ment, brick schools in Beaverdam township; wood floors, built-up roof; Breeze & Rivers, Archts.-Engrs., Castanea Bldg., Asheville. 4-3

N. C., Charlotte — St. Peter's Catholic School, Bishop William Haferty, Raleigh, let contract to Southern Construction Co., for \$90,000 granite, fireproof, parochial school, Dilworth Road, plans by Rey Michael, Belmont Abbey. 2-20

N. C., Newton — School Bd., W. S. Snipes, Supt., let contract to Herman & Sipe, Conover, for New High School recently burned at loss \$100,000. 2-20

S. C., Columbia — Bd. of School Comms., Frank C. Withers, Chmn., let contract at \$30,400 to George R. Price, 2015 Assembly St., for classroom and auditorium addition to Logan School; James B. Urquhart, Archt., Columbia Natl. Bk. Bldg. 3-20

Tenn., Chattanooga — Bd. of Education, Jas. A. Cash, Chmn., let contract at \$38,298 to John Parks Co., 315 Oak St., for Lookout Jr. High School; 2 stories and basement, brick, comp. roof, stone trim; W. H. Sears, Archt., James Bldg. 4-3

Va., Woodberry Forest — Woodberry Forest School, Frank S. Walker, Chmn., Bldg.

Comm., let contract to Harrisonburg Building & Supply Co., Harrisonburg, for \$14,000, rein. conc., brick, limestone trim, 11-classroom school; maple floors, Buckingham slate roof; John M. Donn, Archt., 1223 Connecticut Ave., Washington, D. C. 3-27

### Stores

Ga., Atlanta — Hugh Richardson, Jr., 160 Peachtree St., N. W., excavating for \$15,000, 1-story, 75x100 ft., brick store on Alexander St. near W. Peachtree St., to be occupied by Wagner Electric Co., 473 W. Peachtree St., N. W.; tar and gravel roof, stone trim; A. Ten Eyck Brown, Archt., and A. Barili, Jr. Asso. Archt., both Forsyth Bldg.; owner builds. 12-26

Md., Baltimore — J. G. McCrory & Son, 1107 Broadway, New York, started work on \$65,000, 43x91 ft., 2-story and basement, brick and terra cotta store, 227-29 W. Lexington St.; Minten-Schell Co., Contr., 679 The Arcade, Cleveland, Ohio; Frank Beall, Archt., 334 Paul St., Baltimore. 3-26

Tenn., Memphis — Sears Roebuck & Co., W. L. Acroyd, Gen. Mgr., N. Parkway and Watkins St., soon start work on 1-story, brick addition and improvements to building, 1115 Southern Ave.; comp. built-up roof, conc. and wood floors; Nimmons, Carr & Wright, Archts., 333 N. Michigan Ave., Chicago.

Tex., Eagle Pass — Sam Schwartz let contract at \$39,100 to Blythe & Duerson, Harringen, for remodeling 75x75 store and hotel and erecting 65x75 ft. addition; 2 stories, brick and conc., 4-ply built-up roof, conc., oak, Tiletex and comp. floors; Paul G. Silber & Co., Archts., Bedell Bldg.; Matthews & Kenan, Engrs., Smith-Young Tower, both San Antonio. 3-20

Tex., Eagle Pass — A. D. Eildon started work on 50x150 ft. store on Commercial St.

Tex., San Antonio — Louis Kunkel, 124 Main St., erecting \$15,000 store, Main and Park Aves.; Atlee B. & Robert M. Ayres, Archts., Smith-Young Tower Bldg.

Va., Richmond — P. C. Abbott, Travelers Bldg., erect \$16,000, 2-story brick store, 304 E. Grace St.; Muhleman & Kayhoe, Contrs., 2201 Monument Ave.; W. H. Pringle, Archt., 1502 Avondale Ave.

### Theatres

Ga., Cartersville — Manning & Wink erect theater and remodel present building; brick, stone trim; Daniell & Beutell, Archts., Ga. Savings Bk. Bldg., Atlanta; owner builds, day labor. 3-20

Ky., Horse Cave — Clarence Owens has contract for 3-story theatre; third story for Masonic Hall; building material and equipment to be purchased.

Va., Lynchburg — Following contracts awarded on \$400,000, 2-story and basement, rein. conc., steel, brick and stone theatre for Lynchburg Theatre Corp., for which C. W. Hancock & Sons, Krise Bldg., have general contract; foundation work started; Excavation, Craighill & Showalter, Lynch Bldg.; millwork, Lynchburg Lumber Manufacturing Co., Cleveland Ave.; plumbing, Moseley Bros., 1721 Filmore Ave.; heating, Cleland Co.; sheet metal work, M. M. Nicholas, 201 9th Madison Heights, all Lynchburg; brick work, P. M. Clark, Winston-Salem, N. C.; limestone, Southern Cut Stone Co., Bowling Green, Ky.; struc. steel, Virginia Bridge & Iron Co., Roanoke; roof tile, American Cement Tile Mfg. Co., Oliver Bldg., Pittsburgh, Pa.; rein. steel, Concrete Steel Co., Pennsylvania Bldg., Philadelphia, Pa.; plastering, Clyde M. Watson Co., Atlanta, Ga.; McDonald & Co., Engrs., Southeastern Trust Co., Bldg.; Robert S. Fiske, Const. Engr., Healey Bldg., both Atlanta, Ga.; Public Theatres Corp., Lessee, Paramount Bldg., New York. 1-23

### Warehouses

Ga., Atlanta — Following contracts awarded on \$200,000, 4-story, 107x252 ft., rein. conc. and brick warehouse, 909 Fair St., S. E., under construction for Great Atlantic Pacific Tea Co., Sylvan Road, S. W., for which The Flagler Co., Red Rock Bldg., has general contract; Roofing, The Philip Carey Co., Bona Allen Bldg.; electrical work, Dixie Electric Co., Red Rock Bldg.; plumbing and heating, Stephenson Co., Inc., 143 Spring St.; struc. steel, F. E. Golian Co., Massell Bldg.; steel sash, David Lupton's Sons Co., Bona Allen Bldg.; finish hardware, Beck & Gregg Hardware Co., 64 Marietta St., N. W.; rein. steel, Truscon Steel Co., Rhodes-Haverty Bldg.; elevator doors, Peele Door Co., Norris Bldg.; elevators, Otis Elevator Co., 39 Harris St., N. E.; lumber, Bright-

Brooks Lumber Co., Red Rock Bldg., and Frank G. Lake Lumber Co., 100 Haynes St.; crushed stone, V. H. Kriegshaber & Son, Inc., 681 Greenwood Ave.; cement, Atlanta Aggregate Co., 721 Angier Ave., and Campbell Coal Co., 238 Marietta St., N. W.; sand, Campbell Coal Co.; excavation, Nichols Contracting Co., 1281 LaFrance St., N. E., all Atlanta; round column steel and forms, Hausman Steel Co., Toledo, Ohio. 2-6

Tenn., Memphis — Loose Wiles Biscuit Co., M. L. Jacobson, 132 Webster St., let contract to F. J. Ozanne Construction Co., Empire Bldg., for \$12,000, 1-story, 97x104 ft., brick warehouse, Iowa and Kansas Sts.; Joe T. Wallace, Archt.; Ralph Dippell, Engr., both Bk. of Commerce Bldg.

### Trade Literature

**County Industrial Survey.** — An industrial survey of Tazewell County, Virginia, has been completed by the Engineering Extension Division of the Virginia Polytechnic Institute, Blacksburg, for Southwestern Virginia, Inc., Wytheville, a regional chamber of commerce serving the 19 counties of the southwestern part of the state. The study was prepared under direction of Professor R. L. Humbert, director of surveys of the Institute, and is the twelfth in the series.

**Tractor Equipment.** — An attractive catalog illustrating and describing various types of tractor equipment has been issued by the W-K-M Company, Inc., Houston, Tex., with an export office in New York. The publication devotes considerable space to a detailed description of the W-K-M side boom unit for attachment to Caterpillar tractors, which comes in a number of models, and to portable crushers, winches, back fillers and pipe handling equipment and other machinery.

**Machinery Lubrication.** — A special article on Textile Machinery Lubrication and its Effect Upon Power Economy is presented in the February edition of "Lubrication," an official and technical publication of the Texas Company, New York, devoted to the selection and use of lubricants. The article deals with proper lubrication to be applied prior to spinning and for all textile operations from spinning to finishing.

**Dayton Safety Ladder.** — Designed in two types, A and B, the former of heavier construction, the Dayton safety ladder made by the Dayton Safety Ladder Company, Cincinnati, Ohio, folds compactly for easy handling and is sufficiently light for convenient transportation. A new catalogue has been issued by the company which describes the ladder in detail.

**Wagon Grader.** — The Blaw-Knox Company, Pittsburgh, Pa., manufacturers of steel products, have issued bulletin No. 1210, illustrating and describing the Ball wagon grader, a machine for dirt-moving. The unit combines five dirt-moving requirements—it digs, loads, transports, dumps and spreads—and is of rugged construction. Its employment in Georgia road construction is shown in the booklet.

**Precision Lathes.** — General catalog No. 91-A, describing and illustrating 96 sizes and types of the New Model South Bend precision lathes, with tools and attachments, has been issued by the South Bend Lathe Works, South Bend, Ind. The publication deals with lathe construction and uses, besides presenting data for mechanics and shop owners.

# WANT SECTION

## THE CLASSIFICATIONS IN THIS SECTION ARE:

### Machinery and Supplies

Under this heading are reported requests for data, prices and literature and information on machinery, supplies and miscellaneous materials of a wide variety.

*Items in this department are published without charge and these columns are open for the publication of wants of all kinds relating to construction work, machinery, materials and supplies.*

### Building Materials and Equipment

This division comprises all classes and kinds of materials and equipment used in building and construction projects of every kind.

### Bids Asked

Includes bids asked by U. S. Government, States, districts, municipalities, firms and individuals for machinery, materials, supplies and construction work.

### Machinery and Supplies

**Bushing Press (Hydraulic).**—High Point, Thomasville & Denton R. R. Co., O. Arthur Kirkman, Gen. Mgr., High Point, N. C.—Wants prices and data on small, used, 100 ton hydraulic bushing press for small railroad shop.

**Canning Plant Equipment.**—Rice's Superior Blueberry Nurseries, Inc., S. Rice, Pres., Crestview, Fla.—Wants equipment for small plant.

**Coffee Roasting Outfit.**—Forest Street Grocery, Inc., Spartanburg, S. C.—Wants prices and data on small coffee roasting outfit.

**Creosoting Machinery.**—Sauls Lumber Co., Tylertown, Miss.—Wants prices and data from manufacturers of machinery for small creosoting plant, for creosoting pine lumber for ties, bridges, etc.

**Gear Cutting Machine.**—F. Grote Mfg. Co., Evansville, Ind., manufacturer of passenger and freight elevators—Wants prices and data on new or used gear cutting machine to cut worm gears and internal gears up to approx. 24 in. diam.

**Locomotive.**—J. R. Christian Co., 421 Post-Dispatch Bldg., Houston, Tex.—Wants prices and data on standard gauge locomotive, either gasoline or Diesel.

**Guyan Machine Shops, Inc.**—Logan, W. Va.—Wants prices and data on following: (1) Crane—about 5 ton capacity, locomotive type, electrically or gasoline operated (2) Hoists—for I beam, 1 to 3 ton capacity, a. c. and d. c., 220 volts (3) Lathe—about 20 in. x 16 ft. or longer with taper attachment (4) Locomotive (Electric) — 6 ton, 48 in. gauge, 250 volts, not over 24 in. high with cable reel (5) Locomotive (Steam)—30 ton or smaller, 48 in. gauge, for coal mine (6) Motors—a. c., 220-440 volts, 3 phase, 60 cycle, 5 to 100 h. p. (7) Motor-Generator Set—Ridgeway, 150 or 220 kw., with 6000 volt, 60 cycle motor, 250 volt generator (8) Punch and Shear — preferably No. 1½ Buffalo Universal Iron Worker.

**Wire Goods Manufacturing Equipment and Tools.**—W. E. Toler, Pawnee, Okla.—Wants prices and catalogs from manufacturers of tools and equipment necessary to manufacture goods made of wire.

### Miscellaneous

**Radio Masts.**—English Construction Co., Inc., 1311 H St., N. W., Washington, D. C.—Wants prices and data on 2 steel radio masts, about 75 ft. high, steel tube or pipe, tapered from 10 to 5 in. in diam.

**Road Oil.**—State Highway Comsn., Oklahoma City, Okla., wants quotations on 600,000 gal. road oil.

**Rice's Superior Blueberry Nurseries, Inc.**, S. Rice, Pres., Crestview, Fla., developing 100 acres in blueberries, erecting canning plant, and wants: (1) Cans—No. 1 and 2 (2) Containers—glasses or other containers (3) Labels.

**Road Signs.**—C. S. Donaldson, Mayor, Avon Park, Fla.—Wants prices and data on baked enamel metal road signs.

**S. A. Patterson, Bluff City, Tenn.**—Wants prices and data at once on following for resort:

(1) Boats (Row)—6 or eight, used, good condition (2) Cash Registers—used, good condition (3) Roller Coaster—complete (4) Wire (Electric).

**Seminole Farms, John K. Mowry, Resident Engr.**, Clewiston, Fla., establishing irrigation system and wants data on following: (1) Hardware (2) Lumber (3) Welding Outfits, etc.

### Building Material and Equipment

J. M. Kent, Bldr., Brunswick, Ga., wants new catalogs, data and prices on building materials of all kinds.

C. H. Frederick, 921 Meadowmere St., Springfield, Mo.—Wants prices on following for garage, store buildings and apartments: Ceilings—metal

#### Plumbing and Heating

#### Skylights.

Guyan Machine Shops, Inc., Logan, W. Va., wants prices on: Shed (Steel)—or building about 60x60 ft.

J. H. Fitzgerald, Bldr., R. F. D. No. 2, Baton Rouge, La., estimating on \$12,000 to \$15,000 Citizens Bank Bldg., bids April 11, L. A. Grosz, Archt., Raymond Bldg., Baton Rouge, wants prices on following:

#### Cast Stone

#### Roofing—built-up, tile

#### Steel Sash and Trim.

Jones, Roessle & Olschner, Archts., Maison Blanche Bldg., New Orleans, La., want prices on following for 2-story, 80x80-ft, mortuary for Tharp-Sontheimer & Tharp:

#### Cast Stone

#### Elevators

#### Flooring—tile

#### Limestone

#### Metal Doors

#### Plaster Board

#### Roofing—built-up, slate

#### Steel Sash and Trim

#### Tile—hollow.

Ray Boyle, Sec., Rockport Lodge No. 58, F. & A. M., Malvern, Ark., wants prices on following for \$10,000 temple annex:

#### Metal Ceilings

#### Plaster Board

#### Roofing—built-up

#### Steel Sash and Trim

#### Ventilators.

S. A. Patterson, Bluff City, Tenn.—Wants prices at once on following for resort:

#### Lockers—50 or more, for bathers

#### Toilets (Pay)—6.

Wade & Oemler, Archts., Miami, Fla., want prices on following for \$50,000 dwelling:

#### Cast Stone

#### Dumb Waiters

#### Electric Refrigerators

#### Flooring—tile

#### Incinerator

#### Marble

#### Roofing—built-up, tile

#### Steel Sash and Trim

#### Brass and Bronze Work.

John R. Gilpin, 305 Main St., Russell, Ky., wants prices on following for \$16,000 Sunday school:

#### Flooring—hardwood

#### Limestone

#### Rolling Partitions

#### Roofing (flat)—built-up

#### Steel Sash and Trim

#### Tile—hollow

#### Ventilators.

### Bids Asked

**Axes.**—Purchasing and Constructing Officer, Holabird Q. M. Depot, Baltimore, Md. Bids Apr. 15 for 12 truck axles.

**Bridge.**—Mobile, Ala. See Construction News—Bridges, Culverts, Viaducts.

**Bridge.**—Norfolk, Va. See Construction News—Bridges, Culverts, Viaducts.

**Bridges.**—State of Arkansas. Bids for 9 bridges. See Construction News—Roads, Streets, Paving.

**Bridge.**—State of Maryland. See Construction News—Bridges, Culverts, Viaducts.

**Bridge Extensions.**—Towson, Md. See Construction News—Bridges, Culverts, Viaducts.

**Bridges.**—State of Virginia—Bids for 4 bridges. See Construction News—Roads, Streets, Paving.

**Coal.**—Commr. of Indian Affairs, Washington, D. C.—Bids Apr. 29 for coal for various deliveries during fiscal year 1931.

**Coal.**—Government Fuel Yards, 100 Winder Bldg., Washington, D. C.—Bids May 5 for coal as required during fiscal year 1931.

**Electrical Supplies.**—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Apr. 16 for electrical supplies, delivery Sewall's Point, Va.

**Electrical Supplies.**—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Apr. 15 for electrical supplies, delivery Quantico, Va.

**Engines.**—Purchasing and Contracting Officer, Holabird Q. M. Depot, Baltimore, Md.—Bids Apr. 15 for 6 truck type engines.

### Filter Unit—See Water Works.

**Generating Sets.**—U. S. Engr. Office, Memphis, Tenn.—Bids Apr. 16 for 2 5-kw. electric generating sets.

**Hardware, etc.**—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Apr. 25 for hardware, etc., delivery Philadelphia, Pa.

**Ice Making System.**—U. S. Engr. Office, Memphis, Tenn.—Bids Apr. 15 for 2 steam driven, ammonia, refrigeration and ice making systems.

**Laundry Supplies, Furniture, etc.**—Commr. of Indian Affairs, St. Louis, Mo.—Bids Apr. 26 for laundry equipment, furniture, etc., as required during fiscal year 1931.

**Lawn Mower.**—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Apr. 14 for motor driven lawn mower, delivery Sewall's Point, Va.

**Lawn Mower.**—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Apr. 15 for motor driven lawn mower, delivery New Orleans, La.

**Lining (Mohair Serge, Green).**—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Apr. 24 for 300 yd. green mohair serge lining, delivery Philadelphia, Pa.

**Lubricant.**—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Apr. 22 for 2000 lb. lubricant (transmission), delivery Philadelphia, Pa.

**Machine Shop Equipment, etc.**—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids Apr. 15 for motor driven universal cutter and tool grinder machine and motor driven band saw; bids Apr. 22 for motor driven universal milling machine; bids Apr. 25 for abrasive wheels.

**Metering Outfit, etc.**—Chemical Warfare Service, Edgewood Arsenal, Edgewood, Md.—Bids Apr. 14 for outdoor metering outfit, volt meter, ground detector and power factor meter.

**Miscellaneous.**—Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids Apr. 23 for following, Sch. 2549:

Glass, sash-operating devices, material for toilet accessories, tile, collapsible gates, show windows, steel sash, steel girders, etc.

**Motor Truck and Fire Extinguishers.**—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids Apr. 15 for motor truck and fire extinguishers, to Naval Academy, Annapolis, Md.

**Paints.**—Comms. of Dist. of Columbia, Washington, D. C.—Bids Apr. 18 for 1200 gal. black background enamel and 400 lb. chrome yellow numeral coating for automobile tags.

**Paints.**—U. S. Shipping Board, Washington, D. C.—Bids Apr. 16 for ships' bottom paints, as required during 6 months period beginning May 1.

**Paving.**—Mexico, Mo. See Construction News—Roads, Streets, Paving.

**Paving.**—Jacksonville, Fla. See Construction News—Roads, Streets, Paving.

**Pipe, etc.**—Comrs. of Dist. of Columbia, Washington, D. C.—Bids Apr. 15 for 3200 net tons iron-coated water pipe, 8 to 16 in. and 213 net tons cast-iron water-pipe specials.

**Pipe (Cast Iron).**—See Water Main Construction.

**Pipe (Steel).**—See Water Main Construction.

**Pump.**—U. S. Engr. Office, Memphis, Tenn.—Bids Apr. 17 for 750 to 1000-g. p. m. turbine-driven, centrifugal water pump.

**Pumps.**—U. S. Engr. Office, Memphis, Tenn.—Bids Apr. 14 for 8 pumps.

**Pump (Rotary).**—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Apr. 17 for rotary pump, delivery Quantico, Va.

**Pumping Equipment.**—See Water Works.

**Refrigerating Equipment.**—Office of Public Buildings and Parks, Washington, D. C.—Bids Apr. 15 for refrigerating equipment for ice water system.

**Roads.**—State of Arkansas. Bids for 2 roads. See Construction News—Roads, Streets, Paving.

**Roads.**—State of Maryland. Bids for 5 roads. See Construction News—Roads, Streets, Paving.

**Roads.**—State of Virginia—Bids for 5 roads. See Construction News—Roads, Streets, Paving.

**Roads.**—Towson, Md. Bids for 7 roads. See construction News—Roads, Streets, Paving.

**Roads.**—State of Oklahoma—Bids for 9 roads. See Construction News—Roads, Streets, Paving.

**Roads.**—State of Kentucky. Bids for 3 bridges. See Construction News—Roads, Streets, Paving.

**Road.**—De Valls Bluff, Ark. See Construction News—Roads, Streets, Paving.

**Road.**—Millers Ferry, Ala. See Construction News—Roads, Streets, Paving.

**Roads.**—State of Texas. Bids for 4 roads. See Construction News—Roads, Streets, Paving.

**Roads.**—State of Texas. Bids for 13 roads. See Construction News—Roads, Streets, Paving.

**Rope (Manila).**—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Apr. 14 for 1000 lb. manila rope, delivery Quantico, Va.

**Rubber Goods.**—Chemical Warfare Service, Edgewood Arsenal, Edgewood, Md.—Bids Apr. 15 for rubber tubing, gum tubing and rubber gloves.

**Sewer Construction.**—D. C. Miller, Clk., Memphis, Tenn.—Bids April 15 for Cypress Creek, Country Club and Normal Sewers; work includes furnishing all material and labor (except manhole rims and covers, and pipe which will be furnished f.o.b. cars nearest free switch track); hauling tools for and constructing sewers; Wm. B. Fowler, City Engr.

**Screening.**—Chemical Warfare Service, Edgewood Arsenal, Edgewood, Md.—Bids Apr. 14 for approx. 14,000 sq. ft. copper screen.

**Soap.**—Quartermaster Supply Officer, Fort Sam Houston, San Antonio, Tex.—Bids Apr. 17 for 11,400 lb. castile soap.

**Street.**—Houston, Miss. See Construction News—Roads, Streets, Paving.

**Streets.**—Washington, D. C. See Construction News—Roads, Streets, Paving.

**Tables.**—Div. of Supplies, Dept. of Commerce, Washington, D. C.—Bids Apr. 15 for 22 lithographic draftsmen's tables.

**Tank and Tower.**—See Water Works.

**Telephones, Supplies.**—Office of Ch. Signal Officer, Washington, D. C.—Bids May 2 for 6650 telephones, 180 desk stands, diaphragms, carbon buttons, mouthpieces, receiver caps and shells, worm gears, brackets, insulators, dial number pieces, etc.

**Truck Chassis.**—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Apr. 18 for 2 truck chassis (1/2 ton), delivery Philadelphia, Pa.

**Water Main Construction.**—City of Charlotte, N. C. R. W. Rigsby, City Mgr.—Bids April 18 for materials for 3 miles of 30-in. raw water main from raw water reservoir to city filtration plant; 30-in. A. W. W. A. c. l. pipe with necessary fittings and valves; 30-in. A. W. W. A. Standard steel pipe with necessary fittings and valves.

**Water Works.**—Bd. of Directors Samar-

and Manor, Samarcand, N. C., Dr. Delia Dixon Carroll, Chrmn.—Bids April 28 for improvements to water purification plant, including remodeling filter house and present sand filter; addition of cone mixing chamber; steel wash tank and tower; pumping

equipment; equipping complete filter unit; information, etc. from Bureau of Sanitary Engineering, North Carolina State Bd. of Health, Raleigh, N. C.

**Wire Rope.**—U. S. Engr. Office, Huntington, W. Va.—Bids Apr. 16 for wire rope.

## INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers, whether they are advertisers, or subscribers, or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

### Makers of Air Cleaning Equipment Consolidate.

Effective April 1, the Midwest Manufacturing Company, Inc., the National Air Filter Company, Inc., and the Reed Air Filter Company, Inc., were consolidated under the name of the American Air Filter Company Inc., Louisville, Ky., the latter being the holding company for the three organizations. This consolidation brings together three of the leading manufacturers of air cleaning equipment and offers increased facilities for dealing with problems pertaining to air filtration.

### First Heine Water Tube Boiler.

The first Heine water tube boiler, constructed in 1882 by the Heine Boiler Company, a subsidiary of the Combustion Engineering Corporation, New York, was recently received at the Ford Industrial Museum in Detroit. By way of comparison, it is noted that the Combustion Engineering Corporation recently installed a steam generating unit at the East River station of the New York Edison Company, which can produce as much steam in 11 days as the first Heine boiler could have produced in nearly 50 years.

### Liquidation Sale of Distillery

As agents for the property and to liquidate it, the Liberty Bank & Trust Company, Louisville, Ky., will sell at public auction April 15 the Old Rock Springs distillery property at Owensboro, Ky., consisting of a 16-acre site and 4-story buildings in the Kentucky oil fields. W. R. Crawley is auctioneer and information may be obtained from the bank.

### Vice President of Truscon Steel.

President Julius Kahn of the Truscon Steel Company, Youngstown, Ohio, announces appointment of Oscar W. Loew as a vice president of the company in recognition of his services to the organization. Mr. Loew has been director of advertising and sales promotion for Truscon Steel for the past six years.

### Record Sales of Brass and Copper Pipe in 1929.

According to an estimate by the Copper & Brass Research Association, New York, sales of brass and copper pipe and tubing reached a new high total of 77,902,084 pounds in 1929, almost five times the quantity sold in 1922. Sales in 1928 amounted to 76,777,400 pounds.

### Architect Opens New Office.

Richard W. Alger announces his withdrawal from the firm of Marye, Alger & Vinour, architects, Atlanta, Ga., and the opening of an office at 1300-10 Candler Building, Atlanta, where he will continue the practice of architecture under the name of Richard W. Alger, A. I. A.

### Rack for Maps and Charts.

School authorities, industrial executives and others may be interested in a reversible map and chart rack manufactured at Port Orange, Fla., under supervision of George T. Robinson, principal of the Port Orange Schools. The rack is said to be simple in operation making it practical for slated cloth blackboards and reversible maps and charts mounted on spring rollers.

**Virginia Brick.**—Information regarding brick manufactured in Virginia and obtained from tests conducted by the Ceramic Engineering Department of the Virginia Polytechnic Institute, Blacksburg, has been published as the March bulletin of the college. Tests were made to determine compressive strength, transverse strength, absorptive characteristics and resistance to alternate freezing and thawing, the bricks being furnished by 30 manufacturers representing more than 90 per cent of the brick made in the state, it is said.

**Metal Lath Handbook.**—The Genfire Steel Company of Youngstown, Ohio, recently issued a complete handbook with specifications and technical data for the use of metal lath and its accessories, following the standard practice of lathing and plastering associations and in accord with the standard specifications of the Association of Metal Lath Manufacturers and the American Specification Institute. Materials described in the publication conform to the Schedule of Simplified Practice No. 3, United States Department of Commerce.

**Use of Lacquer.**—The Hercules Powder Company, Wilmington, Del., is distributing a booklet, "The Story of Modern Lacquer," which recounts the tremendous growth in the use of lacquer in recent years and emphasizes the fact that new uses for the product are constantly being developed. As a manufacturer of nitrocellulose, an ingredient of lacquer, celluloids and solutions, the Cellulose Products Department of the Hercules Powder Company offers its cooperation with manufacturers of cellulose products in the development of this field.

**Belt Conveyor Idlers.**—The Stearns Conveyor Company, Cleveland, Ohio, a division of the Chain Belt Company, Milwaukee, Wis., recently completed a catalog and engineering data book containing specialized information on the design and application of Rex-Stearns Timken idlers for all types of belt conveyors, with allied and auxiliary equipment for complete belt conveyor installations. The publication also deals briefly with Rex-Stearns glass plant systems and Rex-Stearns silo storage systems. Rex equipment, made by the Chain Belt Company, includes a broad line of chain and power transmission equipment, conveyors and conveying systems.

Statement of the ownership, management, circulation, etc., required by the Act of Congress of August 24, 1912, of MANUFACTURERS RECORD, published weekly at Baltimore, Md., for April 1, 1930.

*State of Maryland,  
City of Baltimore.*

Before me, a Notary Public, in and for the State and City aforesaid, personally appeared Frank Gould, who, having been duly sworn according to law, deposes and says that he is the Business Manager of the MANUFACTURERS RECORD, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 411, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor and business managers are: Publisher, Manufacturers Record Publishing Co., Baltimore, Md.; editor, Richard H. Edmonds, Manufacturers Record, Baltimore, Md.; managing editor, none; business manager, Frank Gould, Manufacturers Record, Baltimore, Md.

2. That the owner is Manufacturers Record Publishing Company, Baltimore, Md. Stockholders are: Richard H. Edmonds, Manufacturers Record, Baltimore, Md.; Miss Mary E. Edmonds, Manufacturers Record, Baltimore, Md.; Frank Gould, Manufacturers Record, Baltimore, Md.; L. S. Field, Manufacturers Record, Baltimore, Md.; C. R. Merchant, Manufacturers Record, Baltimore, Md.; Estate of H. H. Power, Manufacturers Record, Baltimore, Md.; J. Robert Gould, Manufacturers Record, Baltimore, Md.

3. That there are no outstanding bonds, mortgages or other liens against the property, except mortgage on building, held by Baltimore Commercial Bank.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security-holders, if any, contain not only the list of stockholders and security-holders as they appear upon the books of the company, but also, in cases where the stockholder or security-holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security-holders who do not appear upon the books of the company as trustees hold stock and securities in a capacity other than that of a bona-fide owner, and this affiant has no reason to believe that any other person, association or corporation has any interest, direct or indirect, in the said stock, bonds or other securities than as so stated by him.

FRANK GOULD,  
President.

Sworn to and subscribed before me this 31st day of March, 1930.

HARRY W. KLUTH,  
Notary Public.  
(My commission expires May 3, 1931.)

### Florida Golf Club Development

Miami Beach, Fla.—The big development here of the Indian Creek Golf Club, comprising 275 acres of mounded fill, is expected to be completed this year. A dredging contract amounting to 3,800,000 cubic yards was begun last April and completed the first of February, the work being handled by the Clark Dredging Company, Miami. A mound for a club house was pumped to an elevation of 31.5 feet above mean low water, while mounds for tees and greens were pumped to elevations ranging from 12 to 28 feet. A seawall of 14,300 lineal feet, for which contract was awarded to the Shoreline Builders, Inc., Jacksonville, is practically complete, as is extensive road construction, for which W. T. Price, Inc., Miami, is the contractor. A reinforced concrete

bridge, 360 feet long and 36 feet wide, connecting the island with the beach, has been completed, construction being handled by R. G. Lassiter & Company, Raleigh, N. C., and Miami. Robert Taylor, a local architect, is handling construction details of the club house and work is in progress on the golf course, for which contract was awarded to Toomey & Flynn, Philadelphia, Pa. Other facilities to be provided include a water system calling for 12,000 lineal feet of 12-inch cast iron pipe to connect with the Miami Beach system, a combined reservoir and swimming pool, water distribution system for the golf course with a booster or pumping plant, and a lighting system. Watson & Garris, Civil Engineers, Inc., Miami, are the engineers for the project, while Malcolm Pirnie, New York, is the consulting engineer on the water system, pools, etc.

### Awards for Bridge Design

The American Institute of Steel Construction, Inc., New York, has appointed a jury of architects and engineers to select the most artistic bridges built of steel during the past year. It is planned to award two decorations this year, one for a steel bridge costing in excess of \$200,000 and one for a steel bridge costing under that amount, the awards to be for the most beautiful long-span and the most beautiful short-span bridges. Judgment will be made from photographs now being submitted and awards will be determined at a meeting of the jury in June.

### \$1,000,000 ADDED TO FLORIDA BANK

J. C. Penney and Associates Show Interest in Miami Section

Miami, Fla.—To further show their confidence in Miami and Southern Florida, J. C. Penney and associates have placed another \$1,000,000 in the City National Bank in Miami, and at the same time have reduced capital funds of the institution by \$1,000,000, thereby charging off \$2,000,000 of bad and questionable assets. Mr. Penney and associates acquired majority of the stock of the bank in 1928, putting \$2,000,000 of new money into it and removing from its assets a like amount of bad paper. It was deemed advisable to rid it still further of questionable assets, hence the deposit of the additional funds. With a present capital and surplus of \$1,000,000, it is the purpose of Mr. Penney, who is the chairman of the board of directors, and his associates to conduct the bank along conservative lines, serving the community and aiding the stabilization of the banking situation in Miami.

### POWER IMPROVEMENTS IN A TENNESSEE COUNTY

Tennessee Electric Co. to Push Construction Program This Summer

The American Utilities Co., Inc., announces that its subsidiary, the Tennessee Electric Co., plans extensive improvements to its properties in Crockett County, Tennessee. The light and power distribution system at Alamo, county seat of Crockett County, is to be rebuilt with heavier and better type of construction than at present. A 22,000-volt transmission line will be built from Alamo to Maury City, about six miles. The plant at Maury City will be discontinued upon completion of the new line and the building of a new distribution system in the city. Property at Crockett Mills and the transmission and distributing system in Crockett County will be improved within the next two months. In event the company decides to discontinue purchase of power and to build a generating station at Alamo, an additional investment of \$50,000 will be made.

All outstanding capital stock of the Gibson Light & Power Co. has been acquired by the Tennessee Electric Co., and this property will be improved during the summer.

The entire capital stock of the Tennessee Electric Co., except directors' qualifying shares, is owned by American Utilities Co., Inc., of Columbus, Ohio, a holding company, which, during the past year has been identified as owners and operating managers of the Paint Township Light & Power Co., serving Winesburg and Trail in Holmes County, Ohio; Dundee Light & Power Co., serving Dundee, Tuscarawas County, Ohio; New Washington Electric Co., serving New Washington in Crawford County, Ohio; Geauga Lake Electric Service Co., serving Geauga Lake in Geauga, Cuyahoga and Summit County, Ohio; Lynnville Light & Power Co., Peoples Light & Power Co. and Giles Construction Co., serving Lynnville, Waco, Buford, Riversburg, North Pulaski, East Pulaski, Cedar Grove and Minor Hill, Giles County, Tennessee.

WHEN you want information about the most modern types of—

Power Plant Equipment  
Contractors Machinery  
Building Equipment  
Construction Materials—

Consult the Advertisements and the Classified Index for Buyers appearing weekly in the MANUFACTURERS RECORD.

### Steel Manufacturers to Hold Annual Meeting

The thirty-seventh general meeting of the American Iron and Steel Institute is to be held at the Hotel Commodore, New York, May 9. The program, as outlined, will cover the reading of technical papers at the usual morning and afternoon sessions, followed in the evening by the annual banquet, which, as heretofore, will be a feature of the convention. Among the subjects scheduled for discussion are:

"Contribution of Science to the Iron and Steel Industry," A. D. Little, President, Arthur D. Little, Inc., Cambridge, Mass.;

"Some Comments on Steel Specifications," Dr. John Johnston, Director of Research, United States Steel Corporation, New York;

"Utilization of Waste Heat in the Steel Industry," Charles W. E. Clarke, Consulting Engineer, United Engineers and Constructors, Inc., Philadelphia;

"Steel Plant Lubrication," W. A. James, Chief Engineer, Lackawanna Plant, Bethlehem Steel Co., Lackawanna, N. Y.;

"Steel Frame Houses," L. H. Miller, Chief Engineer, American Institute of Steel Construction, New York;

"Chromium Steels," Dr. F. M. Becker, Vice-President and Chief Metallurgist, Electro-Metallurgical Co., New York;

"Recent Developments in Nickel Steel," Charles McKnight, Metallurgist, International Nickel Co., New York.

James A. Farrell is chairman of the Committee on Arrangements, which includes James A. Burden, E. A. S. Clarke, Charles M. Schwab, John A. Topping and Eugene G. Grace.

The officers of the American Iron and Steel Institute are: Charles M. Schwab, president; Willis L. King, honorary vice-president; James A. Campbell, vice-president; James A. Farrell, vice-president; John A. Topping, vice-president; W. J. Filbert, treasurer; E. A. S. Clarke, secretary, and Howard H. Cook, assistant secretary. Headquarters of the Institute are located at 75 West Street, New York City.

### Value of Cooperative Effort

An interesting story is told of the work of one man in the development of the grapefruit industry in the Rio Grande Valley. According to this statement, John H. Shary, of Mission, Tex., though regarded by cotton growers 14 years ago as wholly visionary when he attempted to awaken an interest in the possibility of the grapefruit industry, has seen this industry grow from his original grove of 300 acres, the first in the valley, to its present extent. This year hundreds of growers are talking about their crop of 4,000 carloads from more than 5,000,000 citrus trees. The Texas Citrus Fruit Growers Exchange, of which Mr. Shary is president, has

more than 1300 members representing 4000 acres of producing orchards and 5000 acres of young groves soon to come in bearing.

It is said that Mr. Shary has been successful in guiding the Growers Association in avoiding extravagance, and packing costs have been reduced from the former price of \$1.10 a box to 80 cents, and the sale cost which was once 25 cents has been cut to 20 cents. There is only one officer of the Exchange, the field superintendent, who draws a salary. An advisory board of governors is being formed and each board member receives \$5 for every meeting he attends.

Illustrating the value of advertising it is stated that a \$1900 campaign of advertising in Des Moines newspapers brought orders for 67 carloads of fruit at a 25 per cent premium over other valley fruit.

One point of which Mr. Shary is very proud is his being able to say, "We have not had a dollar of uncollected money from jobbers in seven years."

Here is a record of development in cooperative marketing which is worthy of careful study by all other interests engaged in fruit growing of any kind throughout the South.

### Noted Negro Chemist and Scientist Continues Research Activities

Dr. George W. Carver, director of the Research and Experiment Station of Tuskegee Institute, Ala., writing to the MANUFACTURERS RECORD said:

"I want you to know that I am striving to do my little job in the world as fast as God gives me light and strength. Every week the MANUFACTURERS RECORD brings me additional inspiration and courage to push ahead."

In connection with the more intensive utilization of Southern agricultural products Dr. Carver has made some remarkable discoveries which have commanded wide attention. On a recent speaking tour through several Middle Western cities, he emphasized possibilities to be found in the chemical utilization of by-products made from peanuts, sweet potatoes, pecans, clays, and waste materials of the South, the study of which Dr. Carver has made his life work.

The associate editor of the Montgomery Advertiser, in a recent special article in that paper referring to Dr. Carver's work said:

"The agricultural South, in seeking a way out of its difficulties, need look no further than its own back yard. Its search will end in the laboratory of Dr. George W. Carver, if the South will show the vision and enterprise necessary to put to practical use the fruits of his vast research work with the native products of Southern soil."

### BUILDING ACTIVITY AT ST. PETERSBURG

#### \$2,500,000 Worth of Construction in Progress or Planned

St. Petersburg, Fla.—According to a survey made by the St. Petersburg Times, new hotels, apartment houses, private homes and other structures under way or planned during the coming season will represent investments of approximately \$2,500,000, while other proposed buildings not yet announced will increase the figures to \$3,000,000 or more. Projects announced for this summer or proposed a little later include a 50-room addition to the Rolyat Hotel to cost \$100,000; new 11-story hotel to be erected at Fourth street and Second avenue by F. M. Rittenhouse and W. B. Slayton at a cost of \$1,250,000; six-story hotel to be erected at 319 Second avenue, north, by R. W. Gilmore at a cost of \$500,000, and an 8-story apartment house to be erected in 1931 by Mr. Gilmore at a cost of \$500,000; co-operative apartment house on Pass-a-Grille Island near Don Ce-Sar Hotel to cost \$325,000; residences in Allendale to cost \$100,000, according to Cade B. Allen, developer; residences to be erected on the Island of Pass-a-Grille by the Thomas J. Rowe Corporation at a cost of \$100,000, and additions to two of St. Petersburg's large hotels. Additional construction for Snell Isle has been announced by C. Perry Snell, to involve \$75,000, as well as the completion of a \$250,000 club house and a \$100,000 draw bridge across Coffee Pot Bayou and the construction of a Venetian swimming pool, all work being in charge of Bob Cribbett, contractor. The Murck Realty Corporation is completing a temporary yacht basin at Pinellas Point and contemplates the erection of several homes during the summer in that vicinity, beside completing a \$16,000 residence already under construction.

#### \$1,000,000 Dallas Building Contract Awarded

Dallas, Tex.—McNeny & McNeny, local realtors, have awarded contract to Henger & Chambers, Dallas, to erect a \$1,000,000 office building at Elm and St. Paul streets, this city. The building will occupy a site 60 by 108 feet and will be 22 stories. Mark Lemmon, Dallas, is the architect.

The St. Louis-San Francisco Railway, F. G. Jonah, chief engineer, St. Louis, Mo., applied to the Interstate Commerce Commission for authority to build a rail line from the northern terminus of its Shamrock branch in Creek County, Oklahoma, to the refinery of the Tidal Refinery Company near Drumright, Okla., a distance of nearly 3 miles.

**"Made First in Baltimore"**

An interesting and instructive map of the world, printed in colors, has been issued by McCormick & Co., Inc., of Baltimore, importers, exporters and packers of a variety of products, including teas from the Orient, vanilla beans from Mexico and the islands of the Far East, lemon and orange oil from Sicily, and raw spices from all parts of the world.

Printed on the back of this map, which is folded so that it can be carried in an inside pocket, are many facts, including a list of things "made first in Baltimore." On this list the following claims are made, most of which we know are accepted as historically correct, although there are some which we have not heretofore seen as claimed for the city. As showing Baltimore achievements as the "first" in many things, the list is extremely interesting. It follows:

The first submarine, known as the "Winans' Cigar Boat," was launched in Baltimore in 1858. It was not a success. The first successful submarine was launched by Simon Lake in 1895.

It was in Baltimore that:

First telegraph line was operated—April 9, 1844;

First armor plate was made—1862;

First patent for locomotive in U. S. secured—1831;

First ribbon of American silk made—1828;

First steam engine for traction purposes operated—1828;

First steam vessel constructed entirely of iron—1837-38;

First full-rigged ships, known as the "Baltimore Clippers," were constructed;

First dental college established—1839;

First vocational school—1888;

First iron building was erected—1850;

First linotype machine made—1890;

First Peruvian guano imported—1772;

First umbrella factory established—1828 (this is still operating);

First chain of dairy lunch rooms started;

First gas made for illuminating purposes—1816;

First private bank established in America;

First electric railroad in United States constructed—1885;

First tunnel, electrically operated, in United States, constructed by B. & O. R. R.—1893;

First city in country to erect monuments to Columbus (1792) and Washington (1815);

First day and night national bank established;

First trunk line system in country (Baltimore & Ohio), operated from Baltimore to Wheeling, W. Va.—1852;

First city to manufacture metallic pens—1810;

First water company established;

First steel plate made for sides of vessels;

First "Declaration of Independence" was printed;

First city in country to operate a municipal band—1917;

First city to provide out of public treasury music for municipally regulated street dancing—1917;

First city to inaugurate a municipal

symphony orchestra—February 11, 1916;

National Anthem, "The Star-Spangled Banner," written in Baltimore harbor, near Fort McHenry, by Francis Scott Key—September 13, 1814;

First public singing of "The Star-Spangled Banner" at the Holliday Street Theatre—1819;

First city in which a National Convention was held for the nomination of a President and Vice-President. This was in 1831. The following successful presidential candidates were nominated in Baltimore: Jackson, Van Buren, Polk, Taylor, Pierce, Fillmore, Lincoln and Wilson.

### Annual Meeting of Southeastern Section of American Water Works Association

The Southeastern Section of the American Waterworks Association will hold its annual meeting at the De Soto Hotel in Savannah April 15-17. The program includes papers on many important problems of pumping stations and water filtration and purification plants; of the sources of supply and the relation of forest cover to ground water supplies. A round-table discussion will be a feature of the meeting.

### FLORIDA TUNG OIL DEVELOPMENTS

#### 36,000-Acre Project Under Way in Okaloosa County and Smaller Development in Marion County

Regarding a recent announcement that the Mid-City Trust Company, Chicago, representing Chicago capitalists, has purchased 9000 acres of land in Santa Rosa County, Florida, for the culture of tung oil trees, E. H. Marhoefer, Chicago, advises that a tract of 36,000 acres in Okaloosa County adjoining the land in Santa Rosa County, is being developed for tung nut purposes by the Crescent Tung-Oil Corporation. The company has just finished planting between 400,000 and 500,000 trees and it is understood the development is progressing satisfactorily.

Another tung oil development has been undertaken by H. W. Bennett, New York, according to newspaper reports, whose plans call for planting 2000 acres of land in the southeastern part of Marion County, Florida, in the vicinity of Altoona. Mr. Bennett already owns 800 acres of land bordering the Weirsdale-Altoona highway, it is said, and has set out 36 acres to tung oil trees, using nursery stock obtained from Gainesville, Fla. He is also planting a considerable acreage to tung seed from which he hopes to get a sufficient number of young trees to plant 2000 acres he controls in that section. A company is being formed, it is announced, to handle the project.

### PRESIDENT APPROVES KEYES-ELLIOTT BILL

Measure Authorizes \$230,000,000 Expenditure for Federal Buildings

Washington, D. C.—President Hoover has affixed his signature to the Keyes-Elliott bill authorizing the expenditure of \$230,000,000 for the construction of new Federal buildings throughout the country. Of the total authorization, \$115,000,000 would be expended for buildings in the District of Columbia and a similar amount for buildings outside of the District, and with authorizations already made, the bill brings the total authorizations to more than \$500,000,000 scheduled for expenditure within the next ten years, or \$50,000,000 annually. The \$115,000,000 authorization in the Keyes-Elliott bill for the District of Columbia provides \$100,000,000 additional for actual construction and \$15,000,000 additional for the purchase of sites in the District.

The measure will have widespread effect in speeding up Federal building construction, it is thought, and in stimulating employment. In addition there are appropriations of approximately \$37,000,000 for the construction of new buildings for the United States Supreme Court, a new House office building, extension of the Capitol grounds and the Arlington Memorial Bridge. Immediate aid in reducing unemployment will be effected by starting work in about 30 days on clearing the ground for the Supreme Court Buildings and in beginning work on the new House office building in about three months, together with work to be done this summer on the extension of the Capitol grounds. The Federal building program will make itself felt in the steel, stone, lumber and other industries, according to Mr. Elliott, who also sees an appreciable stimulus to employment.

### Radio Sets on Airplanes

Fort Worth, Tex.—The Southern Air Transport division of American Airways, Inc., is installing radio receiving sets in its Fokker tri-motored planes operating on the Dallas-Fort Worth to Tulsa section of the Dallas-Cleveland passenger line. M. B. Andrews, radio engineer of the company, is supervising the installation of an approved type he is developing.

Waco, Tex.—McLennan County road bonds in the amount of \$850,000 have been sold to the First National Bank and the Citizens' National Bank, both of this city, on a joint bid of par and accrued interest. The bonds are a portion of an issue of \$4,791,500 voted in December of 1928, of which only \$1,160,000 have been sold.

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 maximum pressures on the pipe lines  
 we have laid with Leadite were from  
 40 to 250 pounds per square inch.”

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## FINANCIAL NEWS

### Bond Issues Proposed

Ark., Amity—School Bd. of Amity Special School Dist. 41, O. T. Hays, Sec., receives bids April 22 for \$30,000, not to exceed 6% bonds.

Ark., Fayetteville—Airport—City, J. C. Massie, Clk., called election for May 8 on \$20,000 bonds.

Ark., Fayetteville—Managers of City Water Plant will issue \$54,000, 5% bonds.

Ark., Harrison—Hospital—City and Boone County, reported, defeated \$25,000 bond issue. 2-27

Ark., Helena—Hospital—City votes May 22 on \$150,000 bonds. 4-3

Ark., Pine Bluff—Library—City, R. E. Lee, Clk., voted \$63,000 bonds. 3-13

Fla., DeFunak Springs—Walton County Commrs., M. T. Fountain, Clk., Circuit Court, received no bids for \$90,000 6% \$1000 denom. bonds; \$40,000, jail; \$50,000, hospital; lately noted bids April 2. 3-27

Fla., Fort Lauderdale—Broward County Port Dist., C. C. Freeman, Chmn., of Port Authority, receives bids April 23 for \$275,000, 6%, \$1,000 denom. bonds.

Fla., Largo—Refunding—Bd. of Supvrs. of Lake Largo-Cross Bayou Drainage Dist., Geo. W. Hancock, Sec., rejected bids for \$70,000, 6%, \$1,000 denom. bonds. 3-27

Fla., Miami Beach—City, C. W. Tomlinson, Clk., authorized \$698,000, Series M, bond issue for paving, sidewalk, sanitary sewer and ocean front protection; may receive bids early in May for \$1,045,000 bonds. 3-27

Fla., Perry—Refunding—Town, J. E. Powell, Clk., received no bids for \$50,000, 6% bonds; lately noted bids March 23. 3-20

Fla., St. Petersburg—City Coms., H. T. Davis, Dir. of Finance, considering \$1,000,000 bond issue, next year, including city hall, sanitary sewer system, seawalls, piers, dredging along waterfront and permanent buildings in park. 4-3

Ga., Atlanta—Street—City, I. N. Ragsdale, Mayor, plans selling \$434,500 bonds; B. Graham West, City Comptroller.

Ga., Cartersville—School—City voted \$100,000, 5% bonds. 3-1

La., Amite—Tangipahoa Parish votes April 15 on bonds for courthouse repairs and jail.

La., Amite—Tangipahoa Parish votes April 15 on \$25,000 School Dist. No. 104 bonds; W. J. Dunn, Supt. of Schools.

La., New Orleans—State Bd. of Liquidation, Baton Rouge, authorized Orleans Levee Bd. to issue and sell \$2,200,000 bonds for seawall on lakefront behind city of New Orleans. 4-3

La., Woodlawn—Woodlawn Drainage Dist. No. 1, Jeff Davis and Calcasieu Parishes, Ebe Miller, Chmn., voted \$100,000 drainage system bonds.

Miss., Blue Mountain—Tippah County Bd. of Supvrs., J. E. McElwain, Clk., plans calling election soon on \$18,750 New West Hatchie and Owl Creek Drainage Dist. bonds.

Miss., Laurel—Courthouse—Jones County defeated \$70,000 bond issue; W. D. Busby, Clk. Bd. of Supvrs. 3-13

Md., Towson—Baltimore County Comms., John A. Haut, Ch. Clk., receive bids May 7 for \$1,000,000, 4 1/2% public school bonds.

Miss., Verona—Verona Consolidated School Dist., D. C. Lawhon, Trustee, voted \$20,000 bonds. 3-20

Mo., Hannibal—Memorial Building—City votes May 6 on \$175,000 bonds.

Mo., Sikeston—City, P. H. Stevenson, Clk., voted \$150,000 bonds for distribution plant. 3-20

Mo., St. Charles—Bd. of Education, Dr. T. L. Hardin, Pres., plans calling election soon on \$70,000 bonds.

N. C., Charlotte—City Council, Edgar Read, City Clk., authorized issuance of \$50,000 sanitary sewer bonds.

N. C., Charlotte—Airport—City Council considering \$250,000 bond issue.

N. C., Fayetteville—Street—City, Bd. of Aldermen authorized \$68,000 bond issue.

N. C., Roxboro—City rejected bids for \$62,000, not to exceed 6% local, improvement bond anticipation notes.

Okl., Bartlesville—City voted \$60,000 bonds for Washington Dist. school; L. A. Rowland, Pres., School Bd.

Okl., Chickasha—Courthouse—Grady County plans \$300,000 bond election.

Okl., Freedom—Water—City, C. A. Wood, Engr., voted \$15,000 bonds.

Okl., Hobart—Water—City votes early in April on \$450,000 bonds.

Okl., Hooker—City plans voting soon on \$20,000 airport bonds; and on bonds for city hall and water extension.

Okl., Nichols Hill, Oklahoma City—Sewer—City plans \$400,000 bond election.

S. C., Greenville—Street—City Council, B. A. Morgan, Atty., plans selling \$46,539, \$1000 denom. bonds.

S. C., Moncks Corner—Tuberculosis Sanatorium—Berkeley County considering \$10,000, not to exceed 6% bond election.

Tenn., Chattanooga—School—City votes first week in August on over \$500,000 bonds; H. D. Huffaker, Commr.

Tenn., Greenfield—Street—City plans \$25,000 bond issue.

Tenn., Johnson City—City Coms., W. B. Ellison, Mayor, receives bids April 17 for \$35,000 school bonds.

Tenn., Pulaski—Right of Way—City votes April 28 on \$15,000 bonds.

Tex., Big Spring—City, C. Cunningham, Mayor, plans receiving bids soon, for \$265,000 bonds; \$130,000, sewer; \$115,000, water; \$20,000, city's share for viaduct; bids recently rejected.

Tex., Brownsville—Road—Oscar C. Dancy, Cameron County Judge, advises report sale of \$1,000,000 bonds on March 27 was erroneous, County does not contemplate any new financing until next fall. 3-13

Tex., Dallas—City, J. Waddy Tate, Mayor, plans issuing and selling, this summer, \$1,500,000 of \$4,000,000 bonds recently voted. 3-20

Tex., Dallas—Sewer—City, J. Waddy Tate, Mayor, voted \$4,000,000 bonds; W. S. Tanner, Sanitary Engr. 3-20

Tex., Edcouch—Sewer—City voted \$35,000 bonds.

Tex., Groesbeck—Ben-Hur School Dist. of Limestone County, votes soon on \$35,000 bonds.

Tex., Houston—Roads, Bridges—Harris County, H. L. Washburn, County Auditor, receives bids April 14 for \$1,500,000 bonds. 4-3

Tex., Houston—Harris County Bd. of Navigation Comms., R. S. Sterling, Chmn., receives bids April 14 for \$2,000,000, \$1,000 denom. Navigation Dist. bonds. 4-3

Tex., Kerrville—Road—Kerr County Highway Committee, G. F. Schreiner, Chmn., considering bond issue.

Tex., Kingsville—Road—Kleberg County, W. H. McCracken, County Judge, receives bids about June 1 for \$150,000, 5%, \$1,000 denom. bonds. 4-3

Tex., Lubbock—Courthouse, Jail—Lubbock County votes April 26 on \$250,000 bonds; Robert H. Bean, County Judge. 3-27

Tex., Mercedes—Bd. of Education, Fred Johnston, Sec., considering issuing \$350,000, 5% bonds.

Tex., San Felipe—San Felipe Independent School Dist. voted \$50,000 bonds; Santos Garaz, Pres. of School Board.

Tex., San Antonio—City, C. M. Chambers, Mayor, votes May 7 on \$4,975,000 bonds; \$600,000, permanent storm and sanitary sewer system; \$750,000, street widening opening and extensions; \$1,000,000, River and San Pedro and Alazan Creek work; \$1,000,000, street paving; \$175,000, bridges; \$600,000, police and fire dept.; \$700,000, parks and Winburn Field; \$150,000, annex to hospital. 4-3

Tex., San Saba—Paving—City votes May 5 on \$75,000 bonds.

Tex., Seabrook—Seabrook Dist. voted \$20,000 bonds; W. M. Day, Pres., Bd. of Trustees. 3-20

Tex., Sinton—San Patricio County Comms. Court, J. C. Houts, County Judge, rejected bids for \$225,000, 5 1/2% Road Dist. No. 5 bonds. 3-27

Tex., Sudan—City considering bond election for paving and sewer.

Tex., Vivian—Vivian Independent School Dist. votes April 15 on \$150,000 bonds.

### Bond Issues Sold

Ala., Alabama City—Paving—City sold \$10,000 bonds to Ward, Sterne & Co., Brown-Marx Bldg., Birmingham. 3-27

Ala., Athens—School—City, R. A. Smith, Clk., sold \$30,000, \$5,000 denom. bonds to Farmers and Merchants Bank of Athens, at par; lately noted receive bids about May. 3-13

Ala., Livingston—Water—Town, M. R. McConnell, Mayor, sold \$39,000, 6%, \$1,000 and \$1,500 denom. bonds to Meridian Finance Corp., Meridian, Miss., at 95 and accrued interest. 3-13

Ark., Batesville—Comms. of Bridge Improvement Dist. No. 1, Charles W. Barnett, Chmn., sold \$70,000, 6% bonds to National Securities Co., Little Rock, at 102.70; Securities Co. also purchased \$90,000, 6%, Dist. No. 4, paving and gutter bonds at 101. 3-20

Ky., Hopkinsville—Road—Christian County Fiscal Court sold \$200,000, 4 1/2% bonds to Stranahan, Harris & Oatis, Inc., Toledo, at par, accrued interest and premium of \$250. 3-27

Ky., Lousiville—Sewer—City sold \$2,000,000 bonds at 100.0055 to National City Co., New York; \$1,525,000, 4%; \$475,000, 4 1/4%. 3-27

La., Bogalusa—School—City Coms., Council, K. I. Bean, Clk., sold \$100,000 bonds to Wellep Central Bank & Trust Co., New Orleans, and Caldwell & Co., Nashville, at par and accrued interest; previously noted received bids. 2-02

Md., Easton—School—Talbot County Comms., J. McKenney Wills, Pres., sold \$30,000, 4% bonds to Wellep-Bruton & Co., Munsey Bldg., Baltimore. 3-27

Missouri—Road—State Bd. of Fund Comms., L. D. Thompson, State Auditor, Jefferson City, sold \$10,000,000, 4 1/4% bonds to Harris Trust & Savings Bank, Chicago, at \$10,057,377. 3-20

Mo., Joplin—State Bd. of Education, Roy Breazeale, Sec., sold \$650,000, 4 1/2%, School Dist. bonds to syndicate composed of Guaranty Co. of New York, First Wisconsin Co., Milwaukee, and Whitaker & Co., St. Louis, at 101.93.

North Carolina—State of North Carolina, Nathan O'Berry, State Treas., Raleigh, sold \$8,920,000, 4 1/4% bonds to syndicate composed of First National Bank of New York, National City Co., Bankers Co. of New York, Kissel, Kinnicut & Co., Stone & Webster & Blodget, Inc., Eldredge & Co., B. J. Van Ingen & Co., Chatham Phenix Corporation, Phelps, Fenn & Co., George B. Gibbons & Co., Inc., Solomon Bros. & Hutzler, all New York; Continental Illinois Co., Inc., Chicago; First Detroit Co., Inc., Detroit; Wachovia Bank & Trust Co., Raleigh; E. H. Rollins & Co., Curtis & Sanger, both Boston; Mercantile Commerce Co., St. Louis; First Securities Corp., Minneapolis; American Trust Co., Charlotte; \$550,000, Chowan River Bridge; \$1,000,000, permanent public buildings; \$2,000,000, Great Smoky Mountain National Park; \$1,970,000, permanent improvement; \$2,000,000, World War veterans' loan. 3-27

Okl., Altus—Altus School Dist., Jackson County, sold \$200,000, \$1000 denom. bonds to Brown-Crummer Co., Wichita, Kan.; \$185,000, 5%; \$15,000, 4 1/2%. 3-13

Okl., Lawton—Road—Comanche County sold \$100,000, 5% coupon bonds to American First Trust Co., Oklahoma City, at \$237 premium.

Tenn., Chattanooga—City, E. D. Bass, Mayor, sold \$553,000, 4 1/2% bonds, jointly, to First National Bank of Chattanooga, and Chemical National Co., New York, at \$11,975 premium; \$198,000, sewer; \$355,000, paving. 3-20

Tex., Angleton—Sewer—City sold \$32,000 bonds to E. L. Dalton, Dallas, at par.

Tex., Corsicana—Public Improvement—City sold \$400,000, 5% bonds to Dallas Union Trust Co., Dallas, at \$800 premium.

Tex., Crockett—Crockett Independent School Dist., J. E. Towery, Sec., sold, tentatively, \$78,000, 5% bonds to State Bd. of Education; will offer \$32,000 bonds later; lately noted receives bids for \$100,000 bonds. 2-20

Tex., Fredericksburg—Road—Gillespie County Comms. sold \$220,000 bonds to Caldwell & Co., Nashville, at par and accrued interest.

Tex., Haskell—Road—Haskell County sold (Continued on page 100)

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Mortar made of one part BRIXMENt, three parts sand, has both plasticity and strength. It becomes so hard that a nail cannot be driven into the joint; its ultimate strength exceeds that of the brick itself.

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MANUFACTURERS RECORD

# Excerpts from the Seventy-Ninth Annual Report of Louisville & Nashville Railroad Company

## Year Ended December 31, 1929

TABLE NO. 1  
INCOME ACCOUNT

RAILWAY OPERATING INCOME—	
Railway Operating Revenues	\$132,055,983.32
Railway Operating Expenses, 79.17 per cent	104,546,674.23
Net Revenue from Railway Operations, 20.83 per cent	27,509,309.09
Railway Tax Accruals	\$7,566,457.15
Uncollectible Railway Revenues	23,789.69
 Total Operating Income	 19,919,062.25
NON-OPERATING INCOME—	
Equipment Renters—	
Hire of Freight Cars—Credit Balance	\$1,474,449.25
Rent from Locomotives	49,582.98
Rent from Passenger-Train Cars	166,360.83
Rent from Work Equipment	35,842.95
Joint Facility Rent Income	1,726,776.01
Income from Lease of Road—	347,808.82
Clarksville & Princeton Branch	\$12,039.70
Paducah & Memphis Division	206,506.20
Miscellaneous Rent Income	218,545.90
Miscellaneous Non-operating Physical Property	52,568.50
Separately Operated Properties—Profit	95,973.82
Dividends, Interest—	507,000.00
Chicago, Indianapolis & Louisville Ry. Co. \$420,709.50	
Nashville, Chattanooga & St. Louis Ry. 803,887.00	
Louisville, Henderson & St. Louis Ry. Co. 90,350.00	
Sundry Stocks 48,532.00	
From stocks held under Georgia R. R. Lease. 97,444.00	
Income from Funded Securities—	1,460,922.50
Sundry bonds and notes maturing more than two years after date. 379,333.96	
From bonds held under Georgia R. R. Lease. 620.00	
	379,953.96

TABLE No. III.  
GENERAL BALANCE SHEET.

Dr.	Assets.
<b>INVESTMENTS:</b>	
Investment in Road and Equipment—	
Road	\$298,187,097.21
Equipment	150,553,053.14
(Table VI.) Improvements on Leased Railway Property (Table VI.)	\$448,750,150.35
Sinking Funds—	
Total Book Assets	607,681.22
Bonds, this Company's Issue (Table V.)	81,000.00
	526,681.22
Deposits in Lieu of Mortgaged Property Sold	71,495.82
Miscellaneous Physical Property	3,067,461.80
Investments in Affiliated Companies—	
(a) Stocks (Table V.)	19,330,488.73
(b) Bonds (Table V.)	1,678,374.21
(c) Notes	954,180.38
(d) Advances	2,872,299.68
Other Investments—	
(a) Stocks (Table V.)	2,016,755.99
(b) Bonds (Table V.)	5,487,404.20
(c) Notes	71,547.56
(d) Advances	1,000.00
	7,576,707.75
CURRENT ASSETS:	
Cash	20,233,769.58
Time Drafts and Deposits	7,875,941.68
Special Deposits—	
Total Book Assets	629,222.50
Bonds, this Company's Issue (Table V.)	500,000.00
Stock (Table V.)	\$5.00
Loans and Bills Receivable	129,217.50
Traffic and Car-Service Balance Receivable	3,156,686.80
Net Balance Receivable from Agents and Conductors	1,437,887.68
Miscellaneous Accounts Receivable	12,102,593.42
Material and Supplies	346,437.23
Interest and Dividends Receivable	92,084.10
Rents Receivable	50,337.64
Other Current Assets	
	49,270,368.19
DEFERRED ASSETS:	
Working Fund Advances	60,747.59
Other Deferred Assets—	
Southern Railway Company's Proportion of Bonds Issued Jointly	5,913,500.00
Other Accounts	487,036.92
	6,400,536.92
UNADJUSTED DEBITS:	
Rents and Insurance Premiums Paid in Advance	6,333.26
Other Unadjusted Debits	1,870,950.33
	1,877,283.59
Securities Issued or Assumed—Unpledged (Table V.)	\$77,272,500.00
Securities Issued or Assumed—Pledged (Table V.)	18,329,000.00
CONTINGENT ASSETS:	
L. & N. Terminal Co. Fifty-year 4 per cent Gold Bonds outstanding, endorsed by Louisville & Nashville Railroad Company and Nashville, Chattanooga & St. Louis Railway	2,500,000.00
Memphis Union Station Company First Mortgage 5 per cent Gold Bonds, guaranteed by Louisville & Nashville Railroad Company and other interested Railroad Companies	2,500,000.00
GRAND TOTAL	\$549,692,969.63

Income from unfunded Securities and Accounts	1,258,045.78
Income from Sinking Funds	20,836.82
Miscellaneous Income	12,194.67
	4,006,041.95
Total Non-Operating Income	6,080,626.78
<b>GROSS INCOME</b>	<b>25,999,689.03</b>
<b>DEDUCTIONS FROM GROSS INCOME:</b>	
Equipment Rents—	
Rent for Locomotives	73,464.96
Rent for Passenger-Train Cars	282,327.50
Rent for Work Equipment	12,584.32
Joint Facility Rents	368,377.08
Rents for Leased Roads—	797,050.23
Nashville & Decatur Railroad	134,867.49
Louisville, Henderson & St. Louis Ry.	108,224.35
Rents of other roads	106,003.07
Miscellaneous Rents	349,091.91
Miscellaneous Tax Accruals	46,731.50
Interest on Funded Debt	18,912.70
Interest on Unfunded Debt	10,631,582.09
Interest on Unfunded Debt	30,321.80
Miscellaneous Income Charges—	
U. S. Income Tax paid on Interest on Tax-Exempt Bonds	21,800.28
Fees and Expenses paid Mortgage Trustee	6,276.10
	23,076.38
Total Deductions from Gross Income	11,107,719.33
Net Income	12,273,146.69
<b>DISPOSITION OF NET INCOME:</b>	<b>13,726,512.34</b>
Income applied to Sinking Funds	298.46
Income Balance Transferred to Credit of Profit and Loss	\$13,726,243.88

TABLE NO. III.  
GENERAL BALANCE SHEET.

STOCKS:	Liabilities.
Capital Stock—	
Full shares outstanding	\$116,860,300.00
Fractional shares outstanding	720.00
Original stock and subsequent stock dividends unissued	138,980.00
Premium on Capital Stock	\$117,000,000.00
	12,116.76
	\$117,012,116.76
GOVERNMENTAL GRANTS:	
Grants in Aid of Construction	127,186.64
LONG TERM DEBT:	
Funded Debt—Unmatured—Book Liability	324,928,720.00
Held by or for this Company (Table V.)	
In Treasury	77,272,500.00
In Sinking Funds	81,000.00
Deposited as Collateral	18,329,000.00
Special Deposit	500,000.00
	96,182,500.00
Actually outstanding (Table IV.)	228,746,220.00
Liability of Southern Railway Company for Bonds Issued Jointly with this Company	5,913,500.00
Non-negotiable Debt to Affiliated Companies—Open Accounts	32,924.75
	234,692,644.75
CURRENT LIABILITIES:	
Trade and Car-Service Balances Payable	\$725,158.27
Audited Accounts and Wages Payable	7,900,568.44
Miscellaneous Accounts Payable	1,431,043.28
Interest Matured Unpaid	1,847,124.50
Dividends Matured Unpaid	221,516.00
Funded Debt Matured Unpaid (Table IV.)	11,000.00
Unmatured Dividends Declared	4,095,000.00
Unmatured Interest Accrued	1,813,230.57
Unmatured Rents Accrued	28,216.66
Other Current Liabilities	227,373.30
	18,300,231.02
DEFERRED LIABILITIES:	
Other Deferred Liabilities	1,113,797.93
UNADJUSTED CREDITS:	
Tax Liability	4,082,732.64
Accrued Depreciation—Road	16,917,982.14
Accrued Depreciation—Equipment	17,632,463.32
Accrued Depreciation—Miscellaneous Physical Property	305,037.26
Other Unadjusted Credits	6,600,113.91
	75,538,310.27
CORPORATE SURPLUS:	
Additions to Property through Income and Surplus	2,866,347.87
Sinking Fund Reserves	56,645.56
Appropriated Surplus not Specifically Invested	251,084.92
Total Appropriated Surplus	2,974,078.35
Profit and Loss—Balance	94,934,603.91
	97,908,682.26
CONTINGENT LIABILITIES:	
L. & N. Terminal Co. Fifty-year 4 per cent Gold Bonds outstanding, endorsed by Louisville & Nashville Railroad Company and Nashville, Chattanooga & St. Louis Railway	2,500,000.00
Memphis Union Station Company First Mortgage 5 per cent Gold Bonds guaranteed by Louisville & Nashville Railroad Company and other interested Railroad Companies	2,500,000.00
GRAND TOTAL	\$549,692,969.63

## *The BLUE BOOK*

### *of SOUTHERN PROGRESS-1930*

*edition*, will be ready for delivery after May 1st and will contain condensed facts and figures on the South's resources, progress and opportunities . . . discussions of the labor situation that all students of business should read; a discussion of the leading industries, the textile situation, sugar growing and by-products manufacture, woodworking, paper making, fertilizer manufacturing, mining and minerals including gas and oil and ceramic industries, farm production, aviation progress and other features of the South's development . . . A special section will be devoted to the South's power resources and expansion programs of public utilities, . . . Southern construction work, building, highways, railroads and waterways and a review of foreign commerce through Southern ports.

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MANUFACTURERS RECORD  
BALTIMORE, Md.

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## Two BILLIONS of ADDED OUTPUT



OCCASIONALLY a thoughtful business man asks us, "What place do correspondence schools hold in America's economic system? Do they aid production? Are they a national asset?"

The answer is best stated in terms of simple arithmetic.

Three million seven hundred thousand students have enrolled for instruction with the International Correspondence Schools in the thirty-nine years since their founding. More than three million of them have been American workers. Many of this number have not graduated in the courses they elected, but a majority have progressed far enough to derive real benefit from their study.

Naturally it is impossible to say exactly how much the *productive* capacity of this army of men has been increased. Thousands of I. C. S. students have reported

gains in *income* running from fifty to five hundred per cent, and even higher. At a very conservative estimate, the training received from I. C. S. study results in an increase of at least ten per cent in *earning power* for the average student. And this increased earning power is at least matched by a proportional rise in productive ability.

These 3,000,000 American students of the International Correspondence Schools are a fair cross-section of national population. They are from all stations in life—all industries—all degrees of education. They live in cities, towns and hamlets all across the continent.

A recent economic survey gives the figure of \$7500 as the yearly output of an average American worker. On this basis the *added* output of each I. C. S. student as a result of his training is \$750

a year. For *three million* I. C. S. students we have the breath-taking total of *over two billion dollars* of increased annual production as a result of home study.

If the International Correspondence Schools had never paved the way for the spare-time instruction of those who desire to train themselves, this country would have been incalculably poorer.

Our national growth has produced few institutions more typically American than this great school. It makes equality of opportunity not merely a fine-sounding phrase but a living fact. For it overthrows economic barriers and brings education to every man's door.

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# INTERNATIONAL CORRESPONDENCE SCHOOLS

FOUNDED 1891  
SCRANTON, PENNSYLVANIA

MEMBER, NATIONAL  
HOME STUDY COUNCIL

## FINANCIAL NEWS

(Continued from page 94)

\$300,000, 5%, \$1,000 denom. bonds to Caldwell & Co., Nashville, at 100.07 with 30-day option on \$342,000 more at same price.

Tex., Marshall—Paving—City sold \$150,000, 5% bonds to Caldwell & Co., Nashville, at 97.25 and accrued interest.

Tex., Pampa—Pampa Independent School Dist., Joe M. Smith, Bus. Mgr., sold \$200,000 5% \$1000 denom. bonds to Brown-Crummer Co., Wichita, Kan., and Dallas, at par and accrued interest. 4-3

Tex., Sherman—Highway—Grayson County Commrs. sold \$150,000 bonds to Rogers H. Evans Co., Dallas, at par, accrued interest and \$3150 premium.

Tex., Troup—City, J. A. Pearce, Sec., sold \$46,000 bonds to W. M. Cramer, Dallas; \$21,000, water; \$25,000, sewer.

Tex., Waco—Road—McLennan County, R. B. Stanford, County Judge, sold \$850,000, 4½%, \$1,000 denom. bonds, jointly to First National and Citizens' National Banks, Waco, at par and accrued interest. 3-27

West Virginia—State of West Virginia sold \$4,500,000, 4 and 4½% Highway bonds at 100.055, to syndicate composed of Chase Securities Corp., Kean, Taylor & Co., B. J. Van Ingen & Co., H. L. Allen & Co., all New York; Ames, Emerich & Co., Chicago; R. L. Day & Co., Boston; Otis & Co., Cleveland; Mercantile Commerce Co., St. Louis; Charleston National Bank, Charleston; Equitable Co.; Emanuel & Co., New York; Mitchell, Herrick & Co.

### Building and Loan Associations

Ky., Somerset—Pulaski County Savings & Building Assn., capital \$100,000, chartered; Charles E. Farmer, James Denton, J. V. Wesley.

### New Financial Corporations

Ark., Lake City—Lake City Bank, capital \$25,000, organized; C. C. Watson, Pres.; R. E. Townsend, V.-P.; F. E. Goodwin, Cashier.

Ky., Lexington—Community Financial Service, Inc., capital \$200,000, chartered; W. E. Nichols, 601 Trust Co. Bldg.

Ky., Richmond—Madison-Southern National Bank & Trust Co., formed by consolidation of Madison National Bank & Trust Co., Waller Bennett, Pres., and Southern National Bank, B. M. Ingo, Pres., both Richmond, opens, about May 1, in present Southern National Bank Bldg., with combined assets over \$1,500,000.

La., New Orleans—Sicenia Investment Co., capital \$20,000, chartered; Burnum R. Alford, Pres., 1012 Broadway, Theodore Cotonio, Jr., Sec.

Mo., Hamilton—First Bank & Trust Co., capital \$90,000, established; T. D. Parr, Pres.; formed by merger of First National Bank, True D. Parr, Pres., and Citizens Trust Co., C. A. Dovenspike, Pres., both Hamilton.

Mo., Jefferson City—Missouri National Sales Co., capital \$100,000, chartered; J. T. Leslie, Dale P. Summers, J. D. Witcher.

Okla., Ponca City—Security Bank & Trust, formed by merger of Security Bank & Trust, L. K. Meek, Pres., and Oklahoma State Bank, Ben Dawson, Pres., both of Ponca City; L. K. Meeks, Pres.; Ben Dawson, V.-P.

Tex., Corpus Christi—Texas State Bank & Trust Co., capital and undivided profits over \$200,000, formed by merger of First National Bank, J. E. Garrett, Pres., Robstown, Tex., and Texas State Bank & Trust Co., J. E. Garrett, Pres., Corpus Christi; J. E. Garrett, Pres.; C. C. Stone, Cashier.

Tex., Henderson—Citizens National Bank of Henderson, capital \$100,000, chartered; C. L. Bradford, Pres.; J. E. Heath, Cashier.

Va., Richmond—R. McC. Bullington, Pres. Chamber of Commerce, interested in organizing industrial financing company, with \$500,000 capital.

W. Va., Charleston—National Garage Finance Corp. of Charleston, capital \$25,000, chartered; John B. Adams, 1612 Virginia Ave.

W. Va., Lewisburg—Peoples National Bank of Lewisburg, capital \$50,000, plans organizing; W. H. Garnett, correspondent.

E. W. Ryan and associates purchased controlling interest in City Bank & Trust Co., W. T. Tandy, Pres., and First National Bank, G. C. Long, Pres., both Hopkinsville, Ky.; City Bank & Trust Co., recently acquired Bank of Hopkinsville, W. E. Keith, Pres., making resources of 3 banks, \$5,700,000, and capital and surplus \$500,000; W. S. Tandy and George C. Long, will head merged institution.

Grace Mortgage Corporation, John A. Cutchins, V.-P., Richmond, Va., plans increasing capital \$200,000 to \$250,000, and reducing par value of shares from \$100 to \$25, each.

People's State Bank of South Carolina, W. H. Cary, V.-P., Columbia, S. C., purchased Commercial & Savings Bank, Frank J. Brand, Pres., Florence, and Home National Bank, Samuel B. George, Pres., Lexington, S. C.; present officers and directors of new units in People's system remain in charge.

### Financial Notes

#### Aluminum Company Earnings \$34,421,804

Although 1929 production of the Aluminum Company of America, Pittsburgh, Pa., showed an increase over production of 1928, the company shipped about 7 per cent more aluminum in 1929 than its plants produced, according to its annual report, having purchased scrap and ingot of other makes in substantial quantities. Power from its new dam at Calderwood, Tenn., the third in the proposed series on the Little Tennessee River, is expected to be available within a few months and operations have been enlarged at other plants. Gross earnings of the company and its subsidiaries, for the year ended December 31, 1929, amounted to \$34,421,804, after deduction of operating expenses. Net earnings for the year amounted to \$25,318,050 and net income to \$24,128,509, with a surplus-balance of \$25,938,283.

#### Republic Iron and Steel Report

The thirtieth annual report of the Republic Iron & Steel Company, Youngstown, Ohio, for the fiscal year ended December 31, 1929, shows net income of \$9,780,043, the equivalent after deduction of preferred dividends, of \$9.46 per share on the average number of common shares outstanding during the year. The company expects to complete by May 1 units to its plant for making electrically welded pipe under the Johnston patents, up to and including 16 inches in diameter, and larger units later.

#### Engineers Public Service Report

The Engineers Public Service Company, Inc., New York, reports consolidated gross earnings for the 12 months ended February 28, of \$51,325,066, an increase of \$15,233,682 over the corresponding period last year, and net operating revenue of \$21,777,105, an increase of \$6,655,548. Earnings for the year include those of the Puget Sound Power and Light Company for only three months.

#### American Radiator and Standard Sanitary Corporation Report.

Annual report for 1929 of the American Radiator & Standard Sanitary Corporation, New York, and its subsidiaries, shows gross sales of \$181,797,143, and net sales of \$161,328,343. After a deduction for selling and other expenses, there were consolidated net profits of \$20,012,171. The company has 23 American and 9 European subsidiaries.

#### Louisville and Nashville Expended \$11,531,175.

To meet the growing industrial and transportation needs of the territory it serves, the Louisville & Nashville Railroad Company, according to its seventy-ninth annual report, expended a total of \$11,531,175 during 1929 for additions and betterments, road work and equipment, the last named item amounting to \$5,113,298, while road construction, betterments and additions accounted for \$6,417,877. As of December 31, 1929, the company's road investment amounted to \$298,197,097 and its investment in equipment to \$150,553,053, making a total of \$448,750,150, to which is added its investment for improvements to leased railway property, amounting to \$2,256,104. Gross operating revenues amounted to \$132,055,983 for the year, with gross operating expenses of \$104,546,674, leaving net railway operating revenues of \$27,509,309. From this is deducted \$7,590,246 for tax accruals and uncollectible revenues, leaving a total operating income of \$19,919,062. This compares with \$22,481,353 for 1928. Mileage operated by the road as of December 31, 1929, aggregated 1,460 miles, an increase of 151 miles over the mileage as of December 31, 1928.

**Business Thinking.**—A new book "The Art of Business Thinking," by H. G. Schnackel of Lang, Schnackel & Company, public accountants of New York, in collaboration with Alfred L. Sprecker, formerly instructor in psychology and pedagogy, Marietta College, Ohio, has been issued from the press of John Wiley & Sons, Inc., New York, and Chapman & Hall, Ltd., London. The publication is designed to aid business men in solution of their problems by application of suggestions which it presents. The price is \$2.50.

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Ask for **FREE** Technical Pamphlets and catalogs on machines wanted.

### Improved Steel Log and Cylindrical Washers, Combined Scrubbing and Washing Screens

These machines are based on 50 years experience in building heavy, rugged machines for economically washing hematite, manganese and gold ores, limestone, sand, gravel, peat, etc.

*Write for catalogs and information on Pit, Mine Quarry and Industrial Equipment, crushers, ore jigs, screens, dryers, hoists, etc.*

**McLanahan and Stone Machine Company**  
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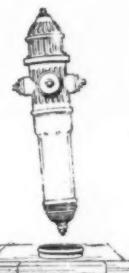
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**— PROPOSALS —**

BOND ISSUES BUILDINGS PAVING GOOD ROADS

Bids close May 1, 1930.

**TREASURY DEPARTMENT**, Bureau of Engraving and Printing, Washington, D. C., March 20, 1930.—Sealed proposals are invited to furnish this Bureau with check paper, postage stamp paper, and internal revenue paper, during the fiscal year beginning July 1, 1930. Contracts will be made only with actual manufacturers of postage stamp and internal revenue paper. Proposals to be received not later than 2 p. m., Thursday, May 1, 1930. Blank forms with specifications for proposals and further information will be furnished on application to **A. W. HALL**, Director.

Bids close May 2, 1930.

**TREASURY DEPARTMENT**, office of the Supervising Architect, Washington, D. C., April 7, 1930.—**SEALED PROPOSALS** will be opened in this office at 3 P. M. May 2, 1930, for furnishing all labor and materials necessary for installing one electric passenger elevator and one electric dumbwaiter in the U. S. M. H. at Galveston, Texas. All prospective bidders are hereby notified that any bid submitted in response to this advertisement must be accompanied by a statement of facts in detail of the business and technical organization of the bidder available for the contemplated work, including financial resources and building experience, etc. The United States expressly reserves the right to reject any bid in which the facts as to business and technical organization, financial resources or building experience, compared with the project bid upon, justify such rejection. The successful bidder will be required to furnish a performance bond of 50% of the contract price. Drawings and specifications may be obtained from this office. **JAS. A. WETMORE**, Acting Supervising Architect.

#### GENERAL INFORMATION

##### About Proposal Advertising in Manufacturers Record

**PUBLICATION DAY:** Thursday.

**FORMS CLOSE:** 10 A. M. Tuesday.

When too late to send copy by regular mail to reach us by 10 A. M. Tuesday, forward by night letter or air mail when possible.

##### THE DAILY CONSTRUCTION BULLETIN OF THE MANUFACTURERS RECORD:

Published every business day, gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Construction Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened or when daily insertions are necessary to meet legal requirements.

*The rate is the same for both publications—35 cents a line each insertion.*

Bids close April 23, 1930.

**TREASURY DEPARTMENT**, office of the Supervising Architect, Washington, D. C., March 22, 1930.—Invitation is withdrawn for bids to be opened in this office at 3 P. M. April 23, 1930, for the construction (except elevator and lift) of the U. S. Post Office and Court House at Lynchburg, Va., including demolition and clearing site. **JAS. A. WETMORE**, Acting Supervising Architect.

Bids close May 1, 1930.

**TREASURY DEPARTMENT**, office of the Supervising Architect, Washington, D. C., April 4, 1930.—**SEALED PROPOSALS** will be opened in this office at 3 P. M. May 1, 1930, for furnishing all labor and material required for installing one new hot water heating boiler, etc., in the U. S. Post Office at Laurens, S. C. Drawings and specifications may be obtained from the custodian at the U. S. Post Office at Laurens, S. C., or at this office, in the discretion of the Supervising Architect. **JAS. A. WETMORE**, Acting Supervising Architect.

Bids close May 6, 1930.

**TREASURY DEPARTMENT**, Bureau of Engraving and Printing, Washington, D. C., March 27, 1930.—Sealed proposals are invited for the sale of ink scrapings, and postage stamp and internal revenue paper trimmings, and for the cleaning of windows during the fiscal year beginning July 1, 1930. Proposals to be received not later than 2 P. M. Tuesday, May 6, 1930. Blank forms with specifications for proposals for the several schedules and further information will be furnished on application to **A. W. HALL**, Director.

Bids close May 13, 1930.

**TREASURY DEPARTMENT**, office of the Supervising Architect, Washington, D. C., April 5, 1930.—**SEALED BIDS** will be opened in this office at 3 P. M. May 13, 1930, for the construction (except elevators) of the U. S. Post Office at Passaic, N. J. Drawings and specifications, not exceeding six sets, may be obtained at this office, in the discretion of the Supervising Architect, by any satisfactory general contractor, and provided a deposit of \$25.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. **JAS. A. WETMORE**, Acting Supervising Architect.

## PROPOSALS

## Manufacturers Record

## Toll Bridges

Baton Rouge, La., March 13, 1930.

The Louisiana Highway Commission, Louisiana National Bank Building, Baton Rouge, Louisiana, will receive informal proposals for the financing, design, construction and operation of Toll Bridges at the following locations:

MORGAN CITY OVER ATCHAFALAYA RIVER  
MELVILLE OVER ATCHAFALAYA RIVER  
COUSHATTA OVER RED RIVER  
MONCLA OVER RED RIVER  
JONESVILLE OVER BLACK RIVER  
HARRISONBURG OVER OUACHITA RIVER  
MONOE OVER OUACHITA RIVER  
STERLINGTON OVER OUACHITA RIVER

Total estimated cost of the above bridges is \$6,250,000.

Proposals must include the entire group of bridges as a unit. Separate proposals for individual bridges will not be considered. Proposals must be in conformity with Louisiana Statutes authorizing issue of franchise for constructing and operating toll bridges. Designs must be approved by the State Highway Engineer and by the War Department.

Proposals will be furnished by the bidder. The Commission reserves the right to reject any or all proposals or to select the proposal which is the most desirable.

HARRY B. HENDERLITE,  
State Highway Engineer.  
O. K. ALLEN, Chairman.  
Louisiana Highway Commission.

Bids close April 15, 1930.

## Maryland Highway Work

DEPARTMENT OF PUBLIC WORKS  
STATE OF MARYLAND  
STATE ROADS COMMISSION

## NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for building five sections of State Highway as follows: Carroll County, Contract No. C1-72-54. Federal Aid Project 209—One section of State Highway from the end of Contract No. C1-26 North of Taneytown, toward the Pennsylvania State Line, a distance of 2.5 miles (concrete).

Frederick County, Contract No. F-147-54—One section of State Highway from Woodsboro toward Libertytown, a distance of 1.0 mile (concrete).

Queen Anne's County, Contract No. Q-59-22—One section of State Highway from end of Contract No. Q-46 near Price toward Bridgetown, a distance of 1.0 mile (concrete).

Talbot County, Contract No. T-32-22—One section of State Highway from the State Road near McDaniel toward Tilghman, a distance of 2.42 miles (alternate bids on concrete, slag with concrete shoulders, and penetration macadam).

Talbot County, Contract No. T-33-24—One section of State Highway from the bridge at Knapp Narrows South through Tilghman, and North toward McDaniel, a total distance of 1.18 miles (concrete). will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Streets, Baltimore, Maryland, until 12 M. on the 15th day of April, 1930, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check for the sum of Five Hundred (\$500) Dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond, and comply with the Acts of the General Assembly of Maryland, respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 1st day of April, 1930.

G. CLINTON UHL, Chairman.  
L. H. STEUART, Secretary.

Bids close April 15, 1930.

## Maryland Highway Work

DEPARTMENT OF PUBLIC WORKS  
STATE OF MARYLAND  
STATE ROADS COMMISSION

## NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for reconstruction of bridge floor and building timber dam as follows:

Frederick County, Contract No. F-144-511—Reconstruction of roadway on the bridge over the Monocacy River on the Urbana Pike at Frederick Junction.

Wicomico County, Contract No. W-57-111—Proposed dam to be built at the bridge on the road from Salisbury to Princess Anne over the Wicomico River, known as Allen's Mill Pond.

will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Streets, Baltimore, Maryland, until 12 M. on the 15th day of April, 1930, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check for the sum of Five Hundred (\$500) Dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond, and comply with the Acts of the General Assembly of Maryland, respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 31st day of March, 1930.

G. CLINTON UHL, Chairman.

L. H. STEUART, Secretary.

Bids close April 22, 1930.

## Maryland Highway Work

DEPARTMENT OF PUBLIC WORKS  
STATE OF MARYLAND  
STATE ROADS COMMISSION

## NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for building bridges and timber jetties as follows:

Worcester County, Contract No. Wo-79-15—Proposed timber jetties at Ocean City, Maryland. One to be built at North First Street and one to be built at North 14th Street.

Carroll County, Contract No. C1-59-53—Substructure, concrete floor, etc., and approaches required for the proposed grade elimination on the National Pike east of Ridgeville at the Baltimore & Ohio Railroad Company's tracks.

Allegany County, Contract No. A-67-67—Concrete girder bridge at Corriganville on the road from Cumberland to Mt. Savage, over Jennings' Run.

Allegany County, Contract No. A-73-67—Concrete girder bridge on the road from Lonaconing to Westernport over George's Creek at Moscow Mills.

will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Streets, Baltimore, Maryland, until 12 M. on the 22nd day of April, 1930, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans, will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check for the sum of Five Hundred (\$500) Dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond, and comply with the Acts of the General Assembly of Maryland respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 4th day of April, 1930.

G. CLINTON UHL, Chairman.

L. H. STEUART, Secretary.

Bids close April 22, 1930.

## Virginia Highway Work

Richmond, Va.

Sealed bids will be received until Tuesday, 10 A. M., April 22, 1930, Off. of the Va. Dept. of Highways, Richmond, Va. Rt. 12, Proj. S124ABCDEF, Patrick County, 3 mi. Mac., 15,710 cu. yds. excav., 14,214 sq. yds. Mac. Rt. 16, Proj. S206E, Madison County, 3.5 mi. Gr. and Dr., 46,936 cu. yds. excav. Rt. 12, Proj. S360CB1, Grayson County, 4 mi. Gr. and Dr., 53,614 cu. yds. excav. Rt. 44, Proj. F587CB12, Halifax County, 6.4 mi. soil, 107,723 cu. yds. excav., 20,669 cu. yds. soil—two bridges to be received separate—Aarons Cr., 204 ft. 407.9 cu. yds. struct. steel; Hyco Cr., 204 ft. 372.4 cu. yds. struct. steel; Hyco Cr., 204 ft. 372.4 cu. yds. struct. steel. Rt. 205 and 206, Proj. S620A, Roanoke County, 5 mi. Mac., 94,615 cu. yds. excav., 54,966 sq. yds. Mac. Details obtainable upon request.

Bids close April 15, 1930.

## Sanitary Sewers in Memphis, Tennessee, Known as Cypress Creek, Country Club and Normal Sewers

Memphis, Tenn., April 3, 1930.

Notice is hereby given that sealed proposals will be received at the office of D. C. Miller, City Clerk, Room No. 206, Court House, until two-thirty o'clock P. M., Tuesday, April 15th, 1930, for furnishing all labor, materials (except manhole rims and covers, which will be furnished at the City Store Yard by the City of Memphis, and except pipe, which will be furnished F.O.B. cars nearest free switch track), hauling, tools for and constructing the sewers as listed below, and doing other work as follows:

## CYPRESS CREEK SECTION

Between Hugenot Street and Pine Street from Barron Avenue to Central Avenue.

This section includes the laying of approximately twenty-three (23) miles of sanitary sewers, ranging in size from eight-inch (8 in.) to eighteen-inch (18 in.) pipe. Classification varies from 0-6 to 20-22 feet in depth. Other work includes the following:

215 Standard Manholes.

643.5 Vertical Feet of extra depth.

165.9 Vertical Feet of Drop Construction.

## COUNTRY CLUB SECTION

Between Pine Street and Highland Street from Park Avenue to Poplar Avenue.

This section includes the laying of approximately twenty (20) miles of sanitary sewers, ranging in size from eight-inch (8 in.) to eighteen-inch (18 in.) pipe. Classification varies from 0-6 to 18-20 feet in depth. Other work includes the following:

177 Standard Manholes.

656.5 Vertical Feet of extra depth.

97.8 Vertical Feet of Drop Construction.

## NORMAL SECTION

Between Highland Street and Goodlett Street from Park Avenue to Poplar Avenue.

This section includes the laying of approximately twenty (20) miles of sanitary sewers, ranging in size from eight-inch (8 in.) to eighteen-inch (18 in.) pipe. Classification varies from 0-6 to 20-22 feet in depth. Other work includes the following:

183 Standard Manholes.

667 Additional Feet Manhole Depth.

77 Feet Drop Manhole Construction.

The city will receive separate bids on each section, but reserved the right to award contract either separately, a combination of any two sections, or the three sections as a whole.

Specifications and profiles governing the above work may be seen and procured at the office of the City Engineer.

The right is reserved to reject any and all bids.

A certified check for Two Thousand (\$2000.00) Dollars on some solvent bank, made payable to the order of the City of Memphis, or a bidder's bond for a like amount, conditioned on the bidders executing the contract, if awarded to him, shall accompany the proposal.

Said check or bond, as the case may be, will be returned to the unsuccessful bidder when he makes approved bond and executes contract for the faithful performance of the work.

Cash payment for the work will be made out of the special sewer funds of the City of Memphis.

By order of the Board of Commissioners of the City of Memphis.

WATKINS OVERTON, Mayor.

Attest:

D. C. MILLER, City Clerk.

Bids close April 15, 1930.

**Maryland Highway Work**  
 DEPARTMENT OF PUBLIC WORKS  
 STATE OF MARYLAND  
 STATE ROADS COMMISSION

NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for building bridge extensions as follows:  
 BALTIMORE COUNTY—Contract No. B-106-411—Proposed extensions to double span concrete bridge on Gwynn's Oak Avenue over Gwynn's Falls. will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Sts., Baltimore, Maryland, until 12 M. on the 15th day of April, 1930, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charge will be permitted.

No bids will be received unless accompanied by a certified check for the sum of Five Hundred (\$500) Dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond, and comply with the Acts of the General Assembly of Maryland, respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 2nd day of April, 1930.

G. CLINTON UHL, Chairman.  
 L. H. STEUART, Secretary.

Bids close April 25, 1930.

**Street Paving**

Houston, Mississippi.

Sealed bids for the construction of Street Paving Improvements at Houston, Mississippi, will be received by the Mayor and Board of Aldermen, at the office of the Town Clerk, until 1:30 P. M., April 25, 1930, at which time and place they will be publicly opened and read.

The work comprises grading, drainage, concrete curb and gutters, and Cement Concrete Paving.

Approximate quantities of principal items:

45,750 Sq. Yds. Concrete Paving.

34,100 Lin. Ft. Concrete Curb and Gutter.

Plans and specifications may be examined at the office of the Town Clerk, in Houston, Mississippi, or at the office of the Engineers; or a copy may be obtained from the Engineers upon receipt of a deposit of fifteen dollars, of which amount seven and one-half dollars will be refunded when the plans and specifications are returned in good condition.

The right is reserved to reject any or all bids, and to waive informality.

Each bid must be accompanied by a certified check, drawn on a responsible bank, or trust company, and made payable to the Town of Houston, Mississippi, for a sum not less than 1% of the bid; or a bidder's bond for the same amount by a surety company authorized to do business in the State of Mississippi. The successful bidder will be required to furnish performance bond in the sum of 100% of the contract price and one year maintenance bond. The Contractor will be paid in cash month-

ly on the basis of 90% of the value of work done and materials furnished. Contract will be awarded to the lowest bidder.

If further information is desired, address the Engineers.

ASHTON TOOMER, Mayor.  
 R. F. BRAND, Town Clerk.  
 C. N. Harrub Engineering Co.,  
 705 Fourth & First Natl. Bank Bldg.,  
 Nashville, Tenn.

Bids close April 18, 1930.

**Water Main Construction**

Charlotte, N. C.

Materials for 3 miles of thirty (30) inch Raw Water Main for the City of Charlotte, North Carolina.

Sealed bids will be received by the City Manager of the City of Charlotte, N. C., in the Council Chamber of the City Hall until eleven (11) o'clock A. M. on Friday, the 18th of April, 1930, for the furnishing of materials necessary for a thirty (30) inch main from the Raw Water Reservoir to the City Filtration Plant.

Bids will be received on 30-inch A. W. W. A. Cast Iron Pipe with necessary fittings and valves.

Also on 30-inch A. W. W. A. Standard Steel Pipe with the necessary fittings and valves.

Bids to be made as specified in the proposal, a copy of which will be sent immediately upon addressing Mr. W. E. Vest, Superintendent of Charlotte Water Works.

Bids must be made on the form furnished by the city and will be opened in the presence of all interested.

The Council reserves the right to reject any or all bids.

R. W. RIGSBY, City Manager.  
 EDGAR READ, City Clerk.

## CLASSIFIED OPPORTUNITIES

### MINERAL AND TIMBER LANDS, WATER POWER, MISCELLANEOUS PROPERTIES

FOR SALE—Factory Site, City Property, Water Frontage, Tracts for Suburban Development. Timber Lands and Colonizing Lands. H. H. Wefel, Jr., Mobile, Alabama.

FOR SALE—33,000 Acres Louisiana Oil Land. Now leased for oil. Price \$3.00 per acre. One-third cash, balance one and two years at 6%. J. C. HARRISON & CO., Clarksville, Ark.

CUBA MINERALS For Sale—Outcroppings—Lead-zinc ten million tons; Manganese seven million tons; 3 rich gold strikes; 900 acres proven oil land at Matanzas, R. M. BURT, Alta Vista Hotel, Miami, Florida.

MICA MINES FOR SALE  
 280 acres of clear greenish mica, finest quality. Priced \$50,000.00. Will ship to manufacturers 30 days after receipt of order in any quantity desired.

L. B. RAINES, Gadsden, Alabama.

TIMBER AND TIMBER LAND  
 BAGNELL DAM DISTRICT, Missouri—2200 acres Virgin Hardwood Timber for sale. This land close to Lake of 125 miles being formed by Power Dam. F. W. C. Bailey, 559 So. Darlington Ave., R. F. D. No. 7, Tulsa, Okla.

125,000,000 FEET, virgin pines and hardwoods in North Carolina, 100% cruise. Good logging terrain, 3 R. R. outlets. 21,000 acres, \$20 acre, lb. terms. SHOLL, Box 18, Burlington, New Jersey.

900,000,000 feet tropical fancy hardwoods including about 125,000,000 feet genuine Mahogany (*Sweitenia*) all one tract; average less than \$1.00 per thousand. Economical logging, stable Governmental conditions; equable climate; advantageous rates and shipping facilities to the states. Offered for sale first time. Excellent opportunity for investment or long timber supply. Title perfect. Address, No. 8068 care Manufacturers Record, Baltimore, Md.

### Rates, Terms and Conditions

RATES: 30 cents a line each insertion. Minimum space accepted, four lines. In estimating the cost allow six or seven words of ordinary length to a line. When the advertisement contains a number of long words proportion allowance should be made.

Rates for Special Contract:

100 lines 28c a line

300 lines 26c a line

500 lines or more 25c a line

TERMS: For transient advertising cash with order; check, postoffice or express money order or stamps accepted.

On special contract advertising bills are rendered monthly, covering space used each month, payable within ten days.

CONDITIONS: No patent medicine, oil or mining stock advertisements or questionable or undesirable advertisements will be accepted. The assistance of our readers in excluding undesirable advertisements is requested. No display type used.

### FARM, FRUIT AND TRUCK LANDS

#### FLORIDA

10-ACRE POULTRY FARM 2 miles from Court House. Five-room modern cottage, furniture, equipment and tools. Has own water-works, palms and shrubs; 700 hens, 1000 little chicks; 40 dozen egg production daily. Price, \$10,500, one-half cash.

P. John Hart Realty & Inv. Corporation,  
 No. 6 P. O. Arcade,  
 Fort Myers, Florida.

SOUTH CAROLINA  
 5,500 ACRES—Highly cultivated S. Carolina farm; iodine district; growing all crops; equipment, stock to settle estate; \$25 acre; terms. Sholl, Southern Dept., Burlington, New Jersey.

### FARM, FRUIT AND TRUCK LANDS

#### TEXAS

TO SETTLE Estate, 150 acres, all prairie, 6 miles from here, 50 cultivated, 5-room house; worth \$30, for \$20 per acre, all cash. W. H. COFFIELD, Bowie, Texas.

FOR SALE—To settle an estate, 1000 acres of good black land improved, well located, clear of debt and in a good state of cultivation. If interested in the black land belt of North Central Texas or choice lands on the plains near Lubbock or Floydada, Texas. Box 494, Gainesville, Texas.

#### RIO GRANDE VALLEY, TEXAS

300 acres citrus land, located northwest of Mission, where developers are selling same soil for \$1000 to \$1500 per acre; will sell 100 acres for \$80 or all for \$75 per acre; half cash, balance to suit; \$500 to anyone who can show better citrus soil, regardless of price or location. JOHN J. ERICKSON, owner, Box 412, McAllen, Tex.

#### VIRGINIA

FOR SALE—Excellent cattle farm or game preserve, 875 acres, 500 open, Fair buildings. Near Washington & Richmond, Va. Good community, convenient, low taxes. \$10. acre cash. Box 441, Marion, N.C.

RIVER FARM FOR SALE OF EXCHANGE—750 acres, brick mansion, two stock barns, several tenant houses, 125 acres rich bottom land 325 acres fine upland, 300 acres timber. Good neighborhood. Low price. GEO. V. VENABLE & CO., Lynchburg, Va.

### SOUTHERN HOMES

#### AIKEN, S. C.

Sale or Rent—Cottage, 12 rooms, 3 baths. Hot water heat, electric lights. Excellent location. Chauffeur's quarters, 2 rooms, 1 bath, 2 car garage.

GEORGE F. ARCHER, Aiken, S. C.

## SOUTHERN HOME

## SOUTHERN HOMES

in the best city in the Carolinas, \$10,000 to \$75,000, according to size and location.

F. C. ABBOTT & CO.,  
Charlotte, N. C.  
32 years in Charlotte Real Estate.

## AUCTION SALES

## AUCTION

Big liquidation sale

Old Rock Springs Distillery Property

Owensboro, Kentucky

TUESDAY, APRIL 15, 1930

10 A. M.

16 acre factory site with 4 story brick building in the heart of the Kentucky oil fields. 6 deep wells, rail and water transportation facilities. Ideal for Oil Refinery. For catalog, write or wire

Liberty Bank & Trust Co., Agents,  
Louisville, Ky.

W. R. CRAWLEY, Auctioneer.

## BUSINESS AND INVESTMENT PROPERTIES

GADSDEN, ALABAMA, offers wonderful investment possibilities to the conservative buyer of well-located real estate. Gulf States Steel Co. spending twenty million dollars. Southern plant Goodyear Tire Co.; 20 other textile, cast-iron pipe, woodworking and stove industries. Offers same opportunity Birmingham did twenty years ago. For homes, income, industrial properties or business enterprises write FISHER REALTY COMPANY, GADSDEN, ALABAMA.

## BUSINESS OPPORTUNITIES

LONG TERM LOANS, large amounts, made on industrial, mercantile, sawmill properties. THOS. W. GILMER, Attorney, Bay Minette, Alabama.

FOR SALE—To right party half interest in profitable hamper and veneer mill. Located in Florida. Plenty of Timber available. Or will sell outright. Address No. 8081, care Manufacturers Record.

MANUFACTURERS—Write for our FREE Classification Sheets of inventions for sale, covering 135 main subjects, and in one or more of which you will doubtless be interested. ADAM FISHER MFG. CO., 578 Enright, St. Louis, Mo.

WANTED—A MACHINE manufactured that will sell for territory manufacturing and selling right; weight of machine and vital auxiliary equipment about 7 tons, 5 of gray iron castings, none over 300 lbs., and 2 of structural steel, etc. For further details write No. 8069, care Manufacturers Record, Baltimore, Md.

FOR SALE—One-half interest in brick plant. Good proposition to one who can take complete charge. Over 600 acres of good material, clay, coal and shale. Good colors. Now making backups. On two railroads; inside shifting limits; one-half mile from town. Good domestic coal trade. Write H. D. CUSICK, New Comerstown, Ohio.

LUMBER AND FURNITURE MANUFACTURING OFFERS OPPORTUNITY WITH FUTURE.

As equal, silent or active partner, with young man who owns at Virginia shipping station twenty million feet Oak and Chestnut timber, in manufacturing same into furniture and building materials, requiring \$50,000 investment, amply secured by timber and realty. P. MAC, Box 14, Point Pleasant, Pa.

## MEXICO ADVERTISING

MEXICO—If you contemplate extending your business into Mexico, we are in position to furnish you a survey of any line, translate your printed matter into perfect Spanish and circularize Mexico for you. Also furnish you display space in our offices or salesroom and attend to your business here. The four officers of this Company have been in business in Mexico for over 25 years. References and terms given on request. Mexico Information Bureau, Capuchinas No. 69, Box 572, Mexico, D. F.

## FINANCIAL

MONEY WANTED  
6, 7 and 8% Mortgage Loans on City, Town or Country property. Southern Land & Investment Co., Baton Rouge, Louisiana.

## INDUSTRIAL SURVEYS

ENGINEERING REPORTS on resources of cities and towns. Recommendations for industrial development and zoning made by specialists in locating industries.

TECHNICAL SERVICE CO.,  
Woolworth Building New York City

## DEVELOPING AND ENGINEERING

ORGANIZING—DEVELOPING—  
ENGINEERING

Engineering firm, widely experienced in investigating, organizing, developing, designing and supervising construction, solicit correspondence regarding development or extension of meritorious projects and existing industries, power plants and utilities. Address No. 8016, care Manufacturers Record.

## FACTORY BUILDINGS

FOR RENT—Centrally located 2 story building, 10,000 square feet floor space. Suitable manufacturing or wholesale. Elevator. Railway siding in rear. W. C. CASEY, 408 Times Bldg., Chattanooga, Tenn.

FOR SALE—At public auction on April 17th on the premises, Milton, Sussex County, Delaware, Monitor type factory building on one and three-quarter acres of land. Plant has railroad siding and faces concrete State highway. Suitable for almost any kind of manufacturing. Plenty of room for expansion. Ideal labor conditions. Reduce your overhead. Investigate this property. Full details from MICHAEL F. SHEA, Auctioneer, 366 Fifth Ave., N. Y. City, N. Y.

## FACTORY SITES

700 ACRES, level, cleared, exceptional factory site, near west approach \$7,000,000 rail-traffic bridge, Vicksburg. Side track; paved road through center. Sell all or part. BARBOUR REALTY, Vicksburg, Miss.

## PLANT SITE AND TOWN

Excellent plant location, southeast Georgia, on main line Central of Georgia. Village of fifty houses, with clubhouse, adjoining good, small town. Deep well, elevated water tank, pump and water lines installed. Ample labor available for textiles, metal working, wood working, paper mill, clay and ceramics or other industries. Plant site 150 acres, with switch tracks installed. Office building and general equipment available.

NASHVILLE INDUSTRIAL  
CORPORATION,  
OLD HICKORY, TENNESSEE.

## FACTORY AND WAREHOUSE SITES

RICHMOND, VA. Bring your Manufacturing plant or your distributing warehouse to Richmond or its suburbs. Labor plentiful and reasonable. Local transportation covers City, and suburbs for ten to twenty miles. Foreign transportation, 5 trunk line railroads to all sections. Steamers direct to New York with New England connections. Sites with and without trackage. Richmond Trust Co., Real Estate Department, P. O. Box 1555. O. A. HAWKINS, Manager.

## SALES AND WAREHOUSE SERVICE

WE ARE WHOLESALERS to the building material trade distributing from Jacksonville, Fla., several high grade lines. We can offer you a sales and warehouse service for the South East under a safe economical plan, relieving you of the necessity of qualifying to do business in this state. If interested in a better distribution for the South East write No. 8082, care Manufacturers Record, Baltimore, Md.

## PATENT ATTORNEYS

FREE "PATENT PARTICULARS" Sterling Buck, over 23 years Registered Patent Attorney. Prompt and thorough services. Suite M 629 F, Washington, D. C.

PATENTS—Booklet free. Highest references. Best results. Promptness assured. WATSON E. COLEMAN, Patent Lawyer, 724 Ninth St., N. W., Washington, D. C.

PATENTS—TRADEMARKS—COPYRIGHTS Charlotte office convenient to South. PAUL B. EATON, Registered Patent Attorney, 218 Johnson Building, Charlotte, N. C., and 314 McLachlen Building, Washington, D. C.

SEYMOUR & BRIGHT, Registered Patent Attorneys. Established 1876. PATENTS, TRADEMARKS, COPYRIGHTS. Prompt and thorough service. Suite 600-4, Barrister Building, Washington, D. C.

## REPRESENTATIVES WANTED

WANTED—Reliable spare time workers, commission basis, for very remunerative introductory assistance in making local machine sales, etc. PAULY MFG. CO., 1333 K Northwest, Washington, D. C.

## AGENCIES WANTED

MERITORIOUS SPECIALTIES or staples wanted. Small repeat articles preferred. Address MANAGER, 329 Tulsa Trust Building, Tulsa, Okla.

SALES AGENCY desires products sold to the building industry through architects and engineers. Our organization has a large acquaintance in the thirteen northeastern counties surrounding Cleveland. We will put up high-class sales effort against the agency of a high-class product. Address No. 8070, care Manufacturers Record.

## SITUATIONS WANTED

EXECUTIVE with special training and wide experience in handling purchases and supplies would like to locate. Familiar with up-to-date office methods. Address No. 8072, care Manufacturers Record, Baltimore, Md.

## COTTON CLASSE

Extensive experience for many years in handling both Western and Eastern cotton. Excellent references; U. S. Certified cotton classes, South preferred. Address No. 8076, care Manufacturers Record, Baltimore, Md.

## MEN WANTED

IF YOU ARE OPEN to overtures for new connection and qualified for a salary between \$2500 and \$25,000, your response to this announcement is invited. The undersigned provides a thoroughly organized service, of recognized standards and reputation, through which preliminaries are negotiated confidentially for positions of the caliber indicated. The procedure is individualized to each client's personal requirements, your identity covered and present position protected. Established twenty years. Send only name and address for details.

R. W. BIXBY, INC.,  
103 Downtown Bldg., Buffalo, New York

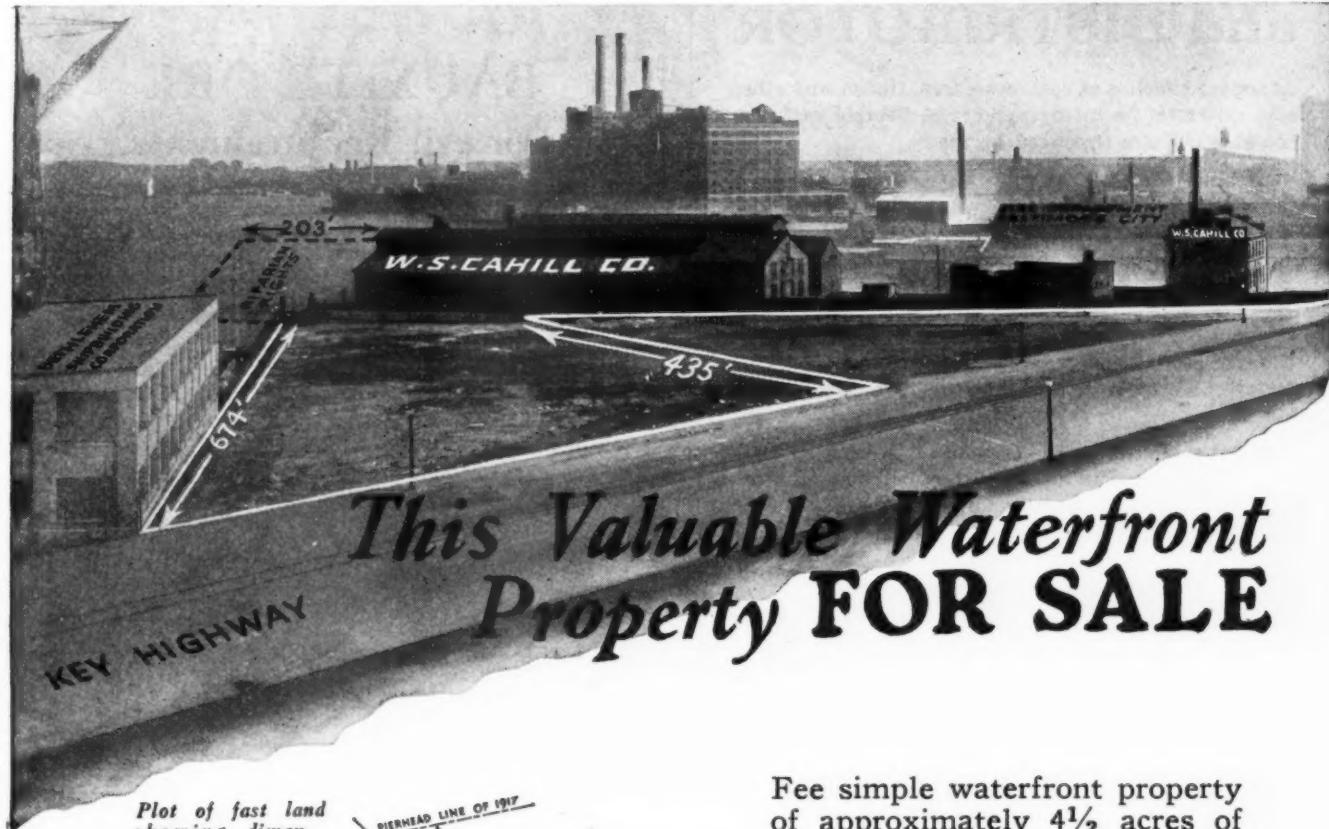
## MACHINERY AND SUPPLIES

WHAT DO YOU NEED? Write or write for FREE copy of Machrec Want List, America's best bargains "arranged so you can understand them."

MACHINERY RECORD, Richmond, Va.

# IDEAL INDUSTRIAL LOCATION

## Five minutes from the Centre of Baltimore, Md.



Plot of fast land showing dimensions and location of buildings.



Fee simple waterfront property of approximately  $4\frac{1}{2}$  acres of fast land and 2 acres of riparian rights, including all real estate, buildings and equipment.

Municipal Belt Line Railroad in front of property, deep water harbor at rear. Property of Bethlehem Shipbuilding Corp. adjoins on the North, and property of Fire Department, Baltimore, adjoins on the Southeast.

*This property suitable for any purpose—particularly*

For full information  
write to

ASSEMBLY PLANT  
For Automobiles, Aeroplanes,  
Refrigerators, etc., etc.  
BRANCH FACTORY  
STORAGE WAREHOUSE  
OIL REFINERY  
SUGAR REFINERY

STEAMSHIP TERMINAL  
For Passengers and Freight  
COLD STORAGE  
EXPORTING and IMPORTING  
ANY INDUSTRIAL OPERATION  
Requiring Deep Water and Railroad  
Transportation Facilities.

**W. S. CAHILL CO.**

Key Highway  
& Webster St.

**BALTIMORE, MD.**

*To the*  
**MANUFACTURER**  
*and DISTRIBUTOR*

Abundant supplies of coal, coke, iron, timber and other raw materials lie in the regions of Georgia and Alabama, which are traversed by the

**Central of Georgia  
 Railway**

Cheap electric power, numerous undeveloped water-powers, good home markets and excellent shipping facilities. Therefore, manufacturing conditions are ideal.

Many of the cities on the Central of Georgia Railway occupy advantageous positions for distributing warehouses, and a number of the larger northern and eastern manufacturers supply their southeastern trade from branch houses in these cities.

Full and detailed information upon application.

**J. M. MALLORY, General Industrial Agent**  
 413 West Liberty St.  
 SAVANNAH, GEORGIA

**DIXIE BAUXITE COMPANY**

Incorporated

SWEET HOME, ARKANSAS

**BAUXITE ORE**  
 For All Requirements

Crude, Dried, and Calcined Bauxite

Abrasive Ore dried or calcined, Chemical Ore dried, Water Purification Ore dried. Very attractive price on extra High Grade Crude Ore.

Just acquired additional large acreage bauxite bearing lands. Five years in the Bauxite Producing business. In it to stay. Pioneers in deep mining for bauxite and at the present time the only Company in the world using vertical shaft and the caving system.

**HOME REFERENCE:**  
 Union Trust Company, Little Rock, Ark.

We sell strictly on guaranteed specifications. Quality, quantity, and prompt shipments guaranteed.

**RESALE DEPARTMENT**

MACHINERY

EQUIPMENT

SUPPLIES

**IMMEDIATE SHIPMENT**

4000 tons of 85 lb. ASCE Open Hearth rail with angle bars. Attractive prices quoted. Wire or write for prices.

**M. K. FRANK**

15 Park Row Clark Building  
 New York City Pittsburgh, Pa.

Ask for 48 page Bulletin 400

Showing thousands of Real Bargains in Oil Engines, Power Machinery, R. R. & Contractors Equipment, Steel Piling, Tanks, etc.

**ZELNICKER IN ST. LOUIS**

What do you need. What have you for Sale?

**HAVE YOU RECEIVED**

**BULLETIN  
 No. 37?**

Sixty-eight illustrated pages of ROCKFORD REBUILT motors, generators, air compressors, etc., all thoroughly overhauled and reconditioned. ONE YEAR GUARANTEED, and reasonably priced.

Send for Your Copy  
 —Mailed Free on  
 Request

**Rockford Power Machinery Co.**  
 "Everything in Motors"  
 620-626 Sixth St., Rockford, Ill.



**A. C. GENERATORS**

15 KW, 1800 RPM, 120/210 V., Gen. Electric.  
 50 KW, 1200 RPM, 2300 V., Gen. Electric.  
 50 KW, 1200 RPM, 230/480 V., Gen. Electric.  
 62½ KW, 1200 RPM, 2300 V., Elec. Machy. Co.  
 62½ KW, 1200 RPM, 230/480 V., Elec. Machy. Co.

150 KW, 900 RPM, 230/480 V., Gen. Elec.

**V. M. NUSSBAUM & CO.**

Fort Wayne Ind.

**FOR SALE**

1—120 H. P. Twin Giant Crude Oil Engine direct connected to 2300 volt Allis Chalmers Generator.

**DILLON SUPPLY COMPANY**

Raleigh, N. C.

**MOTORS**

4—General Electric Company, 100 HP, 900 RPM, 2300 v., 3 phase, 60 cycle Slip Ring type induction motors complete with new control. Net price each f.o.b. Raleigh, N. C. \$750.00

1—150 HP, Allis-Chalmers, 600 RPM, 2300 v., 3 phase, 60 cycle Slip Ring type induction motor complete with control and guaranteed same as new.

Net price f.o.b. Raleigh, N. C. \$1000.00

We can make immediate shipment on the above equipment upon receipt of order.

**THE ELECTRICAL EQUIPMENT CO.**  
 408-410 W. Davie St. Raleigh, N. C.

**RANDLE**

**OFFERS BIG BARGAINS IN**

Used and Rebuilt Engine Generator Sets, Turbo Generator Sets, Motors, Rotary Converters, Generators, Motor Generator Sets, Engines, Belts, Steam and Electric Machinery of all kinds, also Machine Tools. Send for our new machinery list. Yours for the asking. Established 50 years

**The RANDLE  
 MACHINERY CO.**

1734 Powers St., Cincinnati, Ohio

**The**

**Resale Department**

offers a market to dispose of *used equipment*. What it has done for others can be done for you.

*Let us tell you more about it*

**Manufacturers Record**  
 Baltimore, Md.

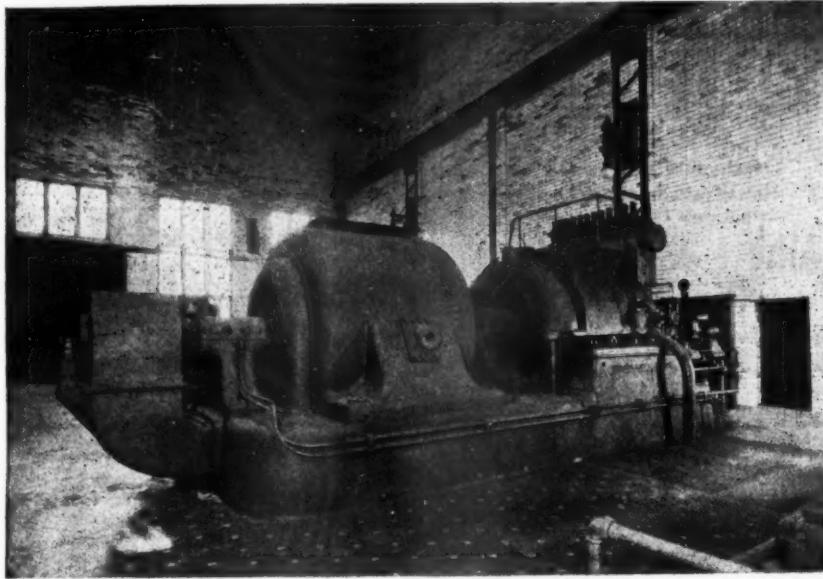
For Sale



Dependable

# POWER PLANT EQUIPMENT

All of which is in A-1 operating condition



## CONDENSERS

4—Worthington Condensers—8000 Sq. Ft., 1-in. Absolute pressure at 7000 G.P.M. and 40° F. circulating water. Serial Nos. 3374, 3591, 3687, 3698.

## CIRCULATING PUMPS

4—Worthington Volute Pumps—Size 16-In., 7500 G.P.M. Serial Nos. 4052, 4161, 5077, 5090.  
Upright Simplex Engines—Type R, Size 12 x 12, Serial Nos. 189761B-354757W, 189638B-354756W, 1907-49B-356511W, 190728B-356510W.  
3—Wheeler Pumps—30-in. Type DAA. Motor driven, 30,000 G.P.M. Complete with auxiliary equipment and mounted on extended base (Direct connected by means of flexible coupling). Serial Nos. 08437, 08438, NEW.

## VACUUM PUMPS

4—Worthington Horizontal Simplex Pumps—Type B, Size 10x22x18, Serial Nos. 182268B-351746W, 182481B-351750W, 190752B-356508W, 190767B-356509W.

## CONDENSATE PUMPS

4—Worthington Condensate Pumps—Size 24-in., 2 Stage, 150 G.P.M. against 25-Ft. head, Serial Nos. 4114, 4113, 5046, 5044.  
Kerr Turbines—Size 12-In., 7½ R.H.P., 1200 R.P.M., 4 stage, Serial Nos. 184, 217, 386, 385.

## BOILER FEED PUMPS

2—Worthington Horizontal Duplex Pumps—Size 10x10x15, Serial Nos. 352132, 354278.  
2—Worthington Pumps—Size 4-in., 4-Stage, 250 lb. pressure, Serial Nos. 6100, 5177.  
Terry Steam Turbines—210 lb. steam, H.P. 100, 2100 R.P.M., Serial Nos. 152, 340.

## EXCITERS

2—General Electric Continuous Current Generators—Type CC, Class 4-100-2400, Form T, Amp. 800, Speed 2400, Volts 125. Serial Nos. 164422, 304836.  
Curtis Steam Turbines—K.W. 100, Speed 2400, Form C, Steam pressure 210 lbs. Non-condensing, Serial Nos. 6045, 6253.

## FREQUENCY CHANGERS

1—1000 KW. Frequency Changer (G.E.)—Motor, Type ATT, Class 10-1060-

300, Form C, hp. 1420, volts 9000, amp. 67, cycles 25, Serial No. 86272.  
Generator—Type ATT, Class 24-1000-300, Form C, volts 4150/2400, amp. 139, speed 300, Serial No. 86270.  
1—5000 KW. Frequency Changer (G.E.)—Motor, Type ATT, Class 19-5300-300, Form C, Volts 9000, H.P. 7100, Speed 300, Amp. 398, 25 Cycle, Serial No. 203254.

Generator—Type ATT, Class 24-6870-300, Form C, Volts 12,000, Speed 300, Amp. 231, Serial No. 203256.  
Continuous Current Generator—Type MPC, Class 125-300, Form L, Amp. 980, Speed 300, Volts no load 125, Volts full load 127.5, Serial No. 189061.

## TRANSFORMERS

3—15000 Kva. Transformers (G.E.) Outdoor type, OIWC, 7500 Kva. self-cooled, 55° rise, 3 phase, 60 cycle, 36300/12600 volts. Type HWT. Serial Nos. 2738141-2738142.

The following taps are available: 36300—35475-34650—33825—33000-32175—31350—30525-29700 / 12600-12300-12000. Can be used at 40000 volts with rating of 20000 kva.

4—15000 Kva. Transformers (Pitts.) Outdoor type, OIWC, 7500 Kva. self-cooled, 55° rise, 3 phase, 60 cycle, 33000/12600 volts. Serial Nos. 703279-703280-703281.

The following taps are available: 33000-31500/12600-12300-12000.

2—15000 Kva. Transformers (G.E.) Outdoor type, OIWC, 7500 kva. self-cooled, 55° rise, 3 phase, 60 cycle, 36300/12600 volts. Type H.W.T. Serial Nos. 2738135-2738139.

The following taps are available: 36300—35475—34650-33825-33000-32-175-31350-30525-29700 / 12600-12300-12000.

8—15000 kva. Transformers (G.E.) Outdoor type, OIWC, 7500 kva. self-cooled, 55° rise, 3 phase, 60 cycle, 33000/12600 volts. Type H.W.T., Serial Nos. 2297090-2297101.

The following taps are available: 33000-31500/12600-12300-12000.

1—15000 Kva. Transformer (G.E., W.E.M.) Outdoor type, OIWC, 7500 kva. self-cooled, 55° rise, 3 phase, 60 cycle, 36300/12600 volts. Serial No. 725711.

With tap changer under load giving voltage as follows: 36300-35475

34650-33825-33000-32175-31850 / 38700 / 12600-12300-12000.

1—15000 Kva. Transformer (W.E.M.) Outdoor type, OIWC, 7500 Kva. self-cooled 55° rise, 3 phase, 60 cycle, 36350/12600 volts, Serial No. 1210-417.

With tap changer under load giving voltage as follows: 36350-35510-

34670-33835-33000-32165-31350-30495-29960/12600-12346-12070.

## POTENTIAL AND CURRENT TRANSFORMERS

3—Westinghouse—Type VC. Potential transformers, 33000/110-55, 60 cycle, 200 volt-ampere, Serial Nos. B-2769-E-2770-E-2771.

9—G. E. Potential Transformers—Type EM-12, Ratio 11000/110-66 volts, 200 cycle, 200 watt, dry type.

3—W.E.M. Potential Transformers—Style No. 10441-A, oil filled, Ratio 110/1, 2000 volt, service.

8—Weston Current Transformers—Model 635, Ratio 750:5 Amperes (150:1), 6600 volt.

15—G. E. Current Transformers—Type W-2, Ratio 750:5 Amperes (150:1), 4500 volt.

17—G. E. Current Transformers—Type W-2, Ratio 150:5 Amperes (30:1), 4500 volt.

23—G. E. Current Transformers—Type W-12, Ratio 150:5 Amperes (30:1), 4500 volt.

4—G. E. Current Transformers—Type K-48, Ratio 450:5 Amperes (90:1), 15000 volt.

19—W.E.M. Current Transformers—Type K.A. Ratio 50:5 Amperes, (10:1), 6900 volt.

## RELAYS AND INSTRUMENTS

3—W.E.M. Overload Relays—Type CO, 60 cycle, 4 seconds, range 4-16 amp.

3—W.E.M. Overload Relays—Type CO, 60 cycle, 4 seconds, range 2-6 amp.

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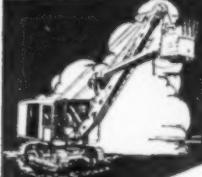
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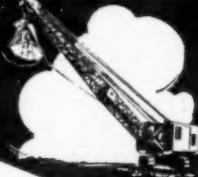
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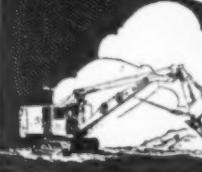
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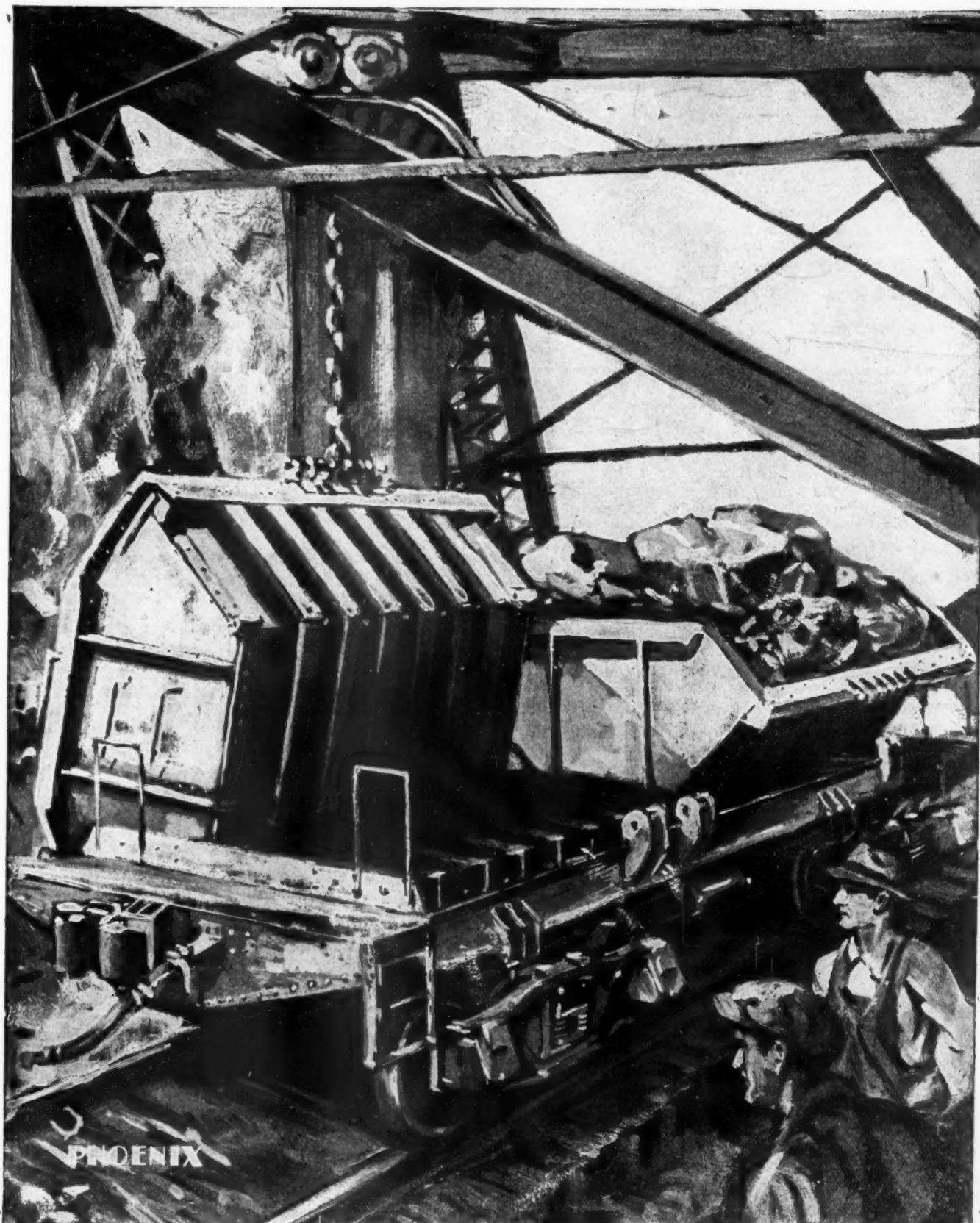
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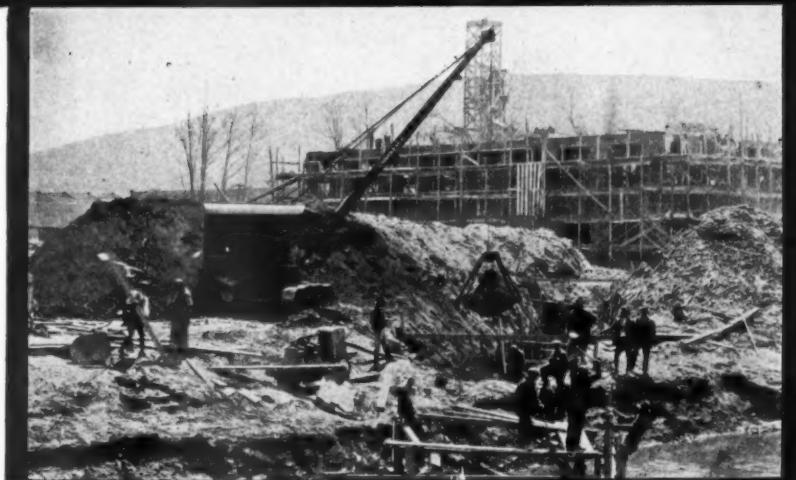
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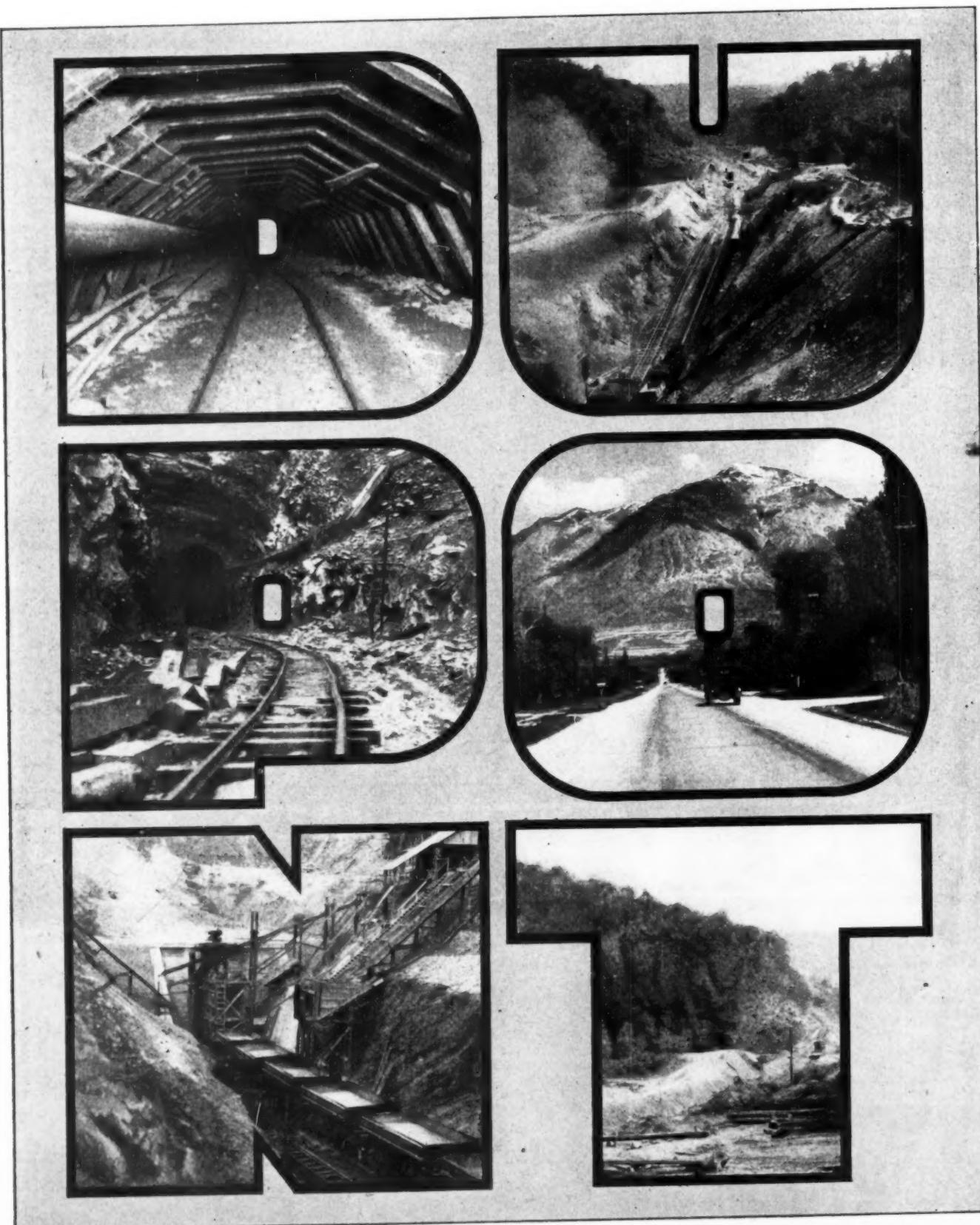
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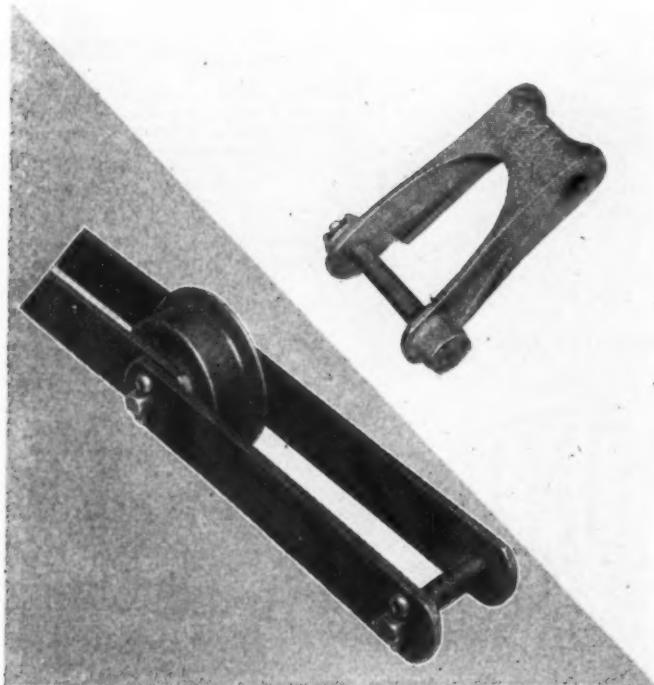
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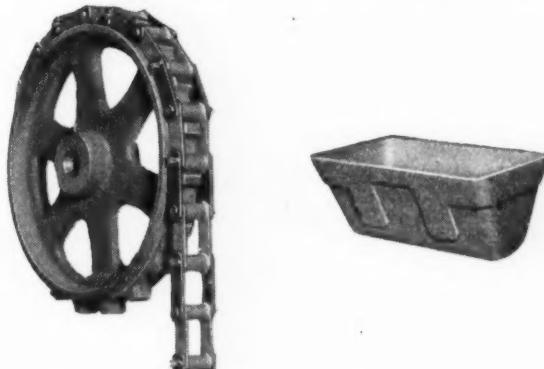
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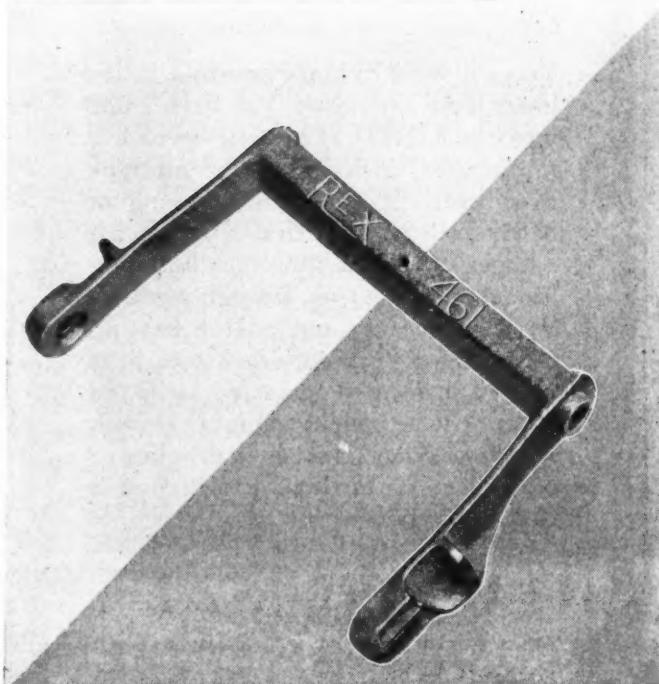
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**Rex Genuine Griplock** is a standard Lumber Mill chain—still unrivalled after 25 years of service. The Hidden Shoulders make Rex Griplock stronger than its pins. It fits the same sprockets as ordinary chain of the same number.

**Rex Griplock Conveyor** is the foremost hog fuel chain on the market. The Hidden Shoulders give greater strength. The wide wearing shoe and lug wing give greater wear and longer life.



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THE STEARNS CONVEYOR COMPANY  
 East 200th St. and St. Clair Ave., CLEVELAND, OHIO  
*(Division of Chain Belt Company)*

BUCKETS • TRANSMISSION • ELEVATORS • CONVEYORS • TRAVELING WATER SCREENS

# Handling more material - at lower costs



FASTER digging isn't all a matter of dipper capacity—getting the shovel to and from the job faster — more dips per minute — easier control that keeps the operator on his toes a full working day. All these things increase the yardage—reduce costs of material handling and leave better margins of profit.

You will want to know how this faster, lower cost operation has been built into the UNIT 512 — all operating mechanism enclosed in an oil-tight case, bearings and gears running in bath of oil, clutches that operate with a finger's pull, the simplification, long life, standardization, interchangeability, ball bearing and roller bearing mounting of chrome nickel steel, heat treated shafts and gears. Versatile too — quickly interchangeable as shovel, trencher, crane, clamshell, dragline or backfiller. Complete information is yours on request.

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Unit Corporation  
of America



Bankers Building  
Milwaukee, Wis.

## CRUSHED LIMESTONE Best for All Purposes

We manufacture all sizes of stone suitable for all classes of road building and concrete work where only a high-grade limestone is required.

Quarries opened up in 1912.

Capacity 4000 tons daily.

### Quarries:

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## Crushed Stone Mascot Chatts Roofing Gravel Asphaltic Roadway Gravel Asphalt Filler Dust



AMERICAN LIMESTONE COMPANY  
KNOXVILLE TENNESSEE

## SHELL

Paving Asphalts, Binders, Brick Filler,  
Road Oils, Cold Patch Compound

REFINED BY  
SHELL PETROLEUM CORPORATION  
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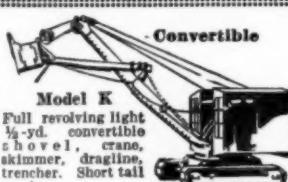
CHATTANOOGA, TENNESSEE

### BUCYRUS ERIE

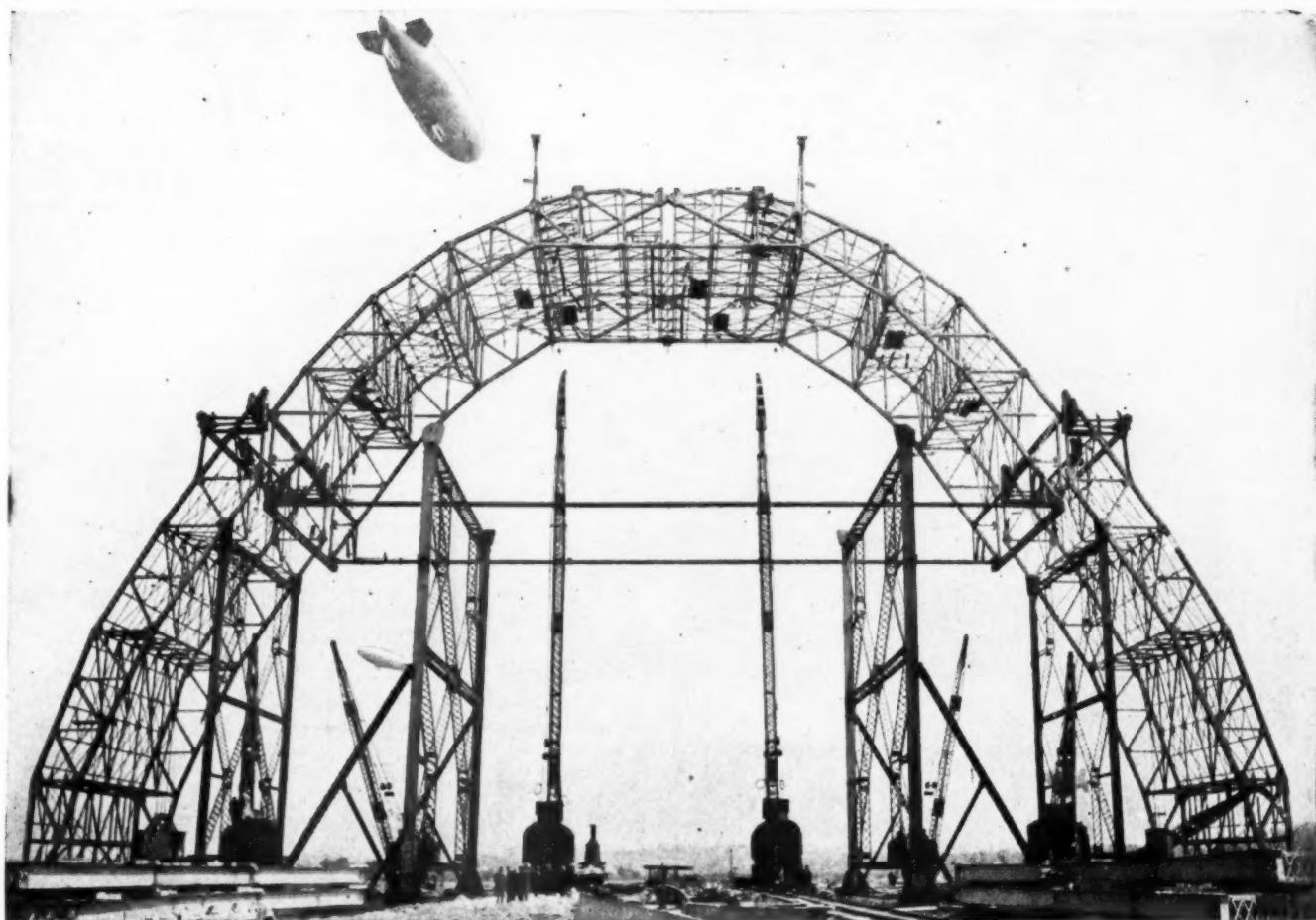
SHOVELS  
CRANES  
DRAGLINES  
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KNOWN RELIABILITY!  
Bucyrus-Erie equipment is known the world over, for dependable, low-cost operation. Shovels, Draglines, Cranes —all sizes—Gas, Diesel, Electric, Gas + Air, Diesel + Air, Steam. Also Railway Cranes, Spreader Plows, etc.  
Write for bulletins.

BUCYRUS-ERIE COMPANY  
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POWER SHOVELS  
Cranes, Trenchers  
SKIMMERS  
Full or part circle  
BAY CITY SHOVELS, Inc.  
Bay City, Mich.



## Seven On Goodyear Hangar Erection

In constructing the giant airship factory and dock for the Goodyear Zeppelin Corporation at Akron, Ohio, the contractors have evolved unique erection methods which saved considerable time and money. Seven Industrial Brownhoist locomotive cranes, two having an overhead reach of 145 feet, were prime factors in this construction work.

The hangar, which will be 1184 feet long, is built around 13 arches having a center height of 198 feet and a clear span of 325 feet. The two haunch sections of these arches are erected to a height within reach of the long boom cranes. Then the center truss, after being completely assembled on the ground, is raised by cranes and counterweights and connected to the haunch sections.

Not only on spectacular jobs like the above, but also in the routine of your own shop and yard operations, an Industrial Brownhoist, equipped with bucket, hook, or magnet would effect a substantial saving. There is a size and type to meet your handling needs.

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District Offices: New York, Philadelphia, Pittsburgh, Detroit, Chicago, New Orleans, San Francisco, Cleveland.

Plants: Brownhoist Division, Cleveland; Industrial Division, Bay City, Michigan; Elyria Foundry Division, Elyria, Ohio.

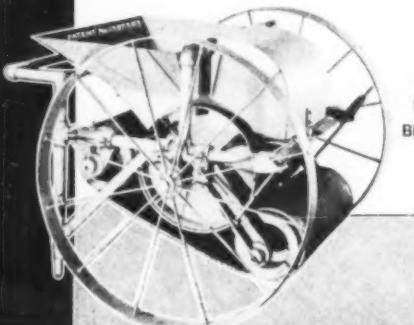
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In About 20 Minutes—

Loading a box car with bulk material and using the Sinden type loader only takes about 20 minutes. This machine is being used by concerns loading such bulk materials as crushed stone, sand, salt, ore, chemicals, fertilizer, etc. It is easily wheeled from place to place by one man. Send for quotation with illustrated bulletin.

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# STEPHENS ADAMSON



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should be installed wherever it is important that a safe and firm foothold be obtained.

### CENTRAL "KNOBBY" FLOORPLATES

offer the most efficient anti-slip surface ever produced in steel plate form.

Send for detailed information and sample

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LABORATORIES  
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Bank Building Concrete Paving

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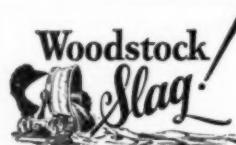
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Wharves: PIER 2, PRATT ST., and FOOT OF CLINTON ST.

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Washed Sand and Gravel for Concrete  
Roads and Buildings  
Filter Gravel, all sizes—Building Bricks  
FRIEND & CO., INC. River St., Petersburg, Va.



for economy and permanence in Road Building and General Construction

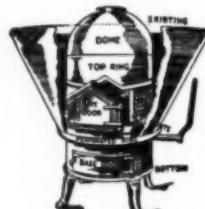
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(With or without External Gratings)

A portable machine, daily capacity 5 to 7 tons.



This dryer has a low first cost, is easily and cheaply operated and guaranteed dry sand.

The low cost makes it valuable for companies needing dry sand on two or more jobs at the same time, thereby eliminating the handling cost of one point only.

Write for descriptive pamphlet

The Ripley Foundry & Machine Co.  
Ripley, Ohio

# DRYERS

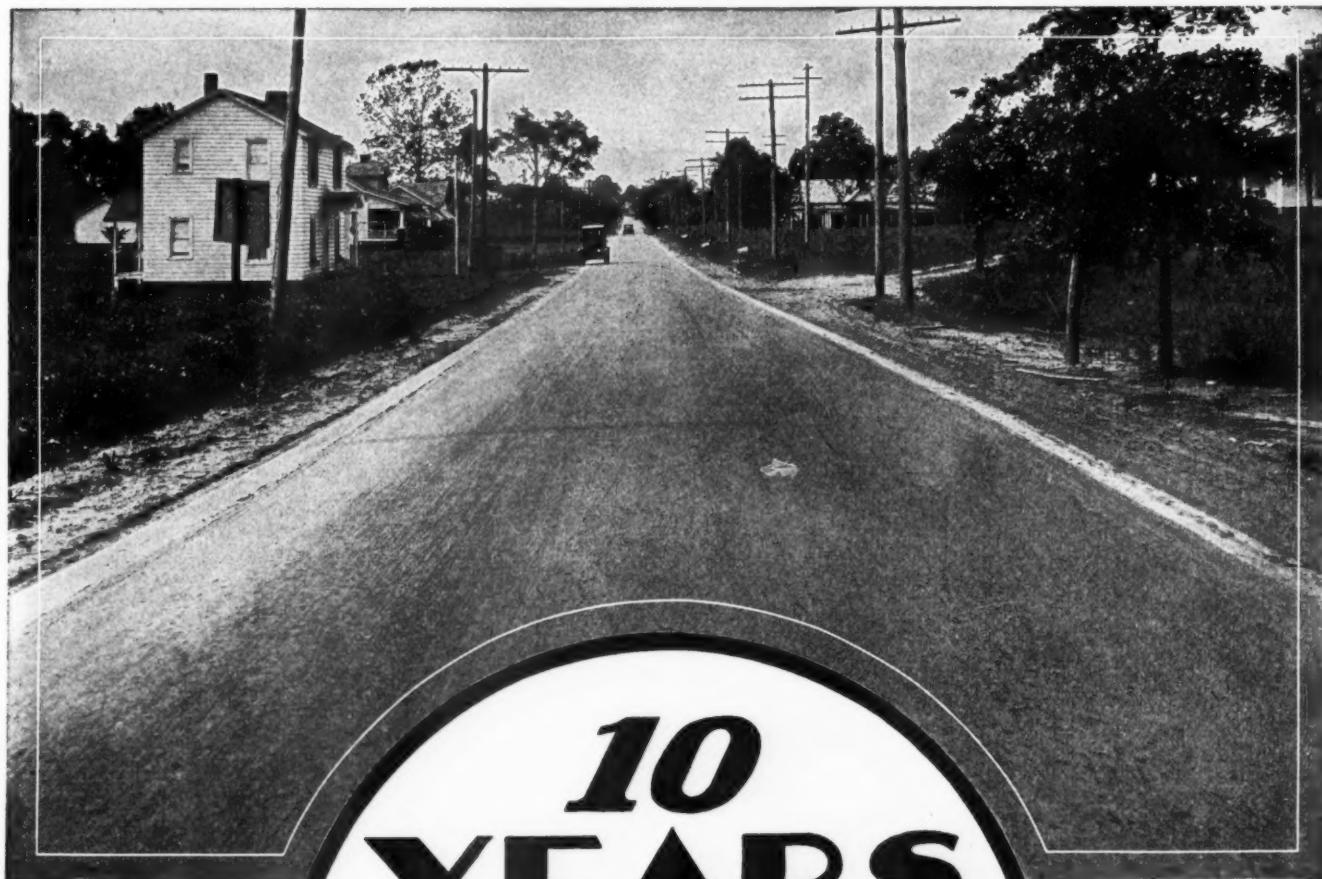
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PHILADELPHIA, PA.



Durham-Chapel Hill Road. Built by North Carolina State Highway Commission in 1920. Carries major traffic. No maintenance to date.

**10  
YEARS  
without a cent of cost  
for  
MAINTENANCE  
to this  
*Kyrock*  
SURFACE**

8 miles of perfect pavement through picturesque North Carolina scenery. 4 miles on 5-inch concrete, 4 miles on macadam. All surfaced with Kyrock.

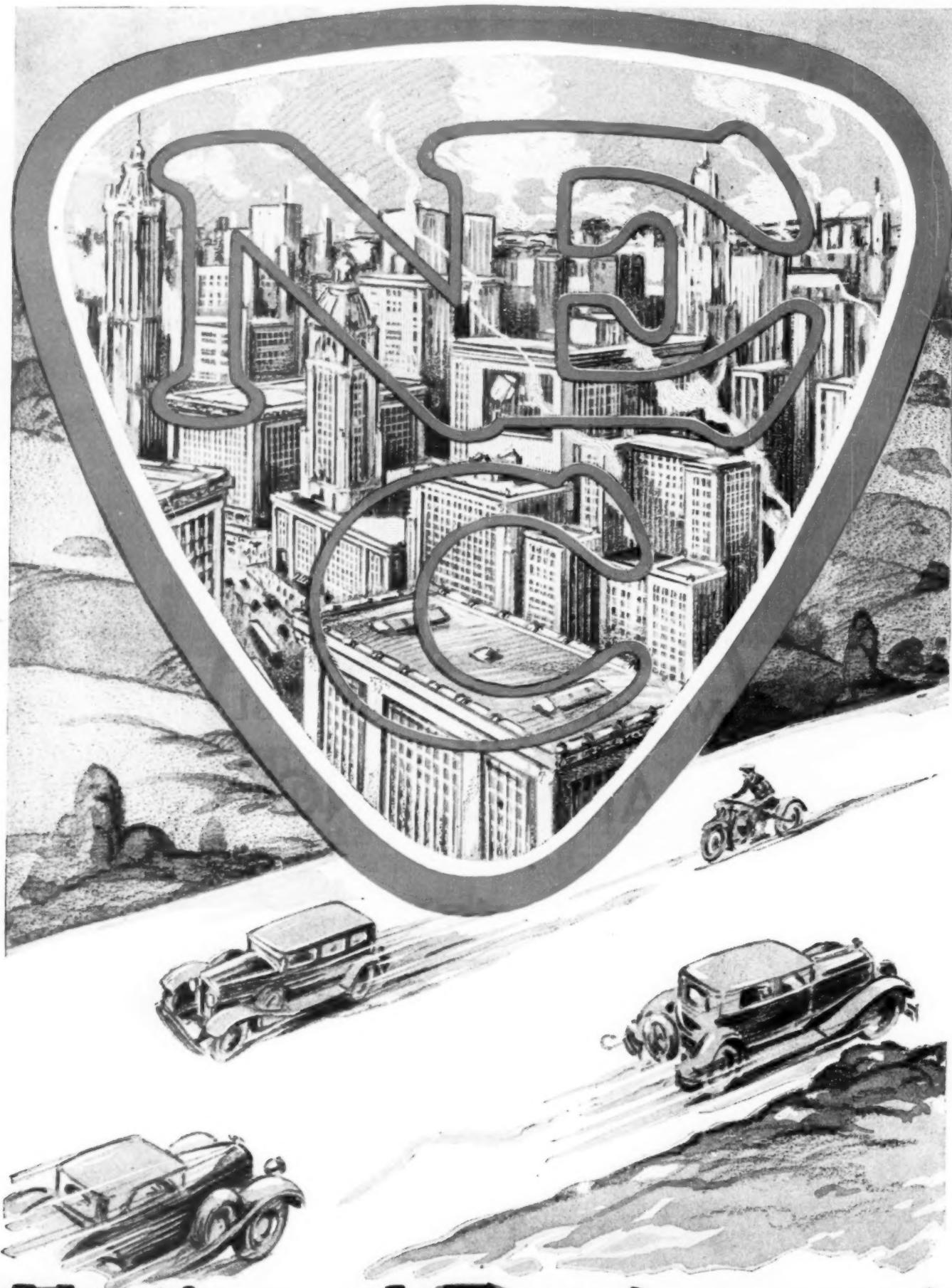
Another veteran Kyrock surface, demonstrating that the real cost of a road is its original cost *plus* maintenance cost over a period of years. When this is taken into consideration it will be found that Kyrock is the cheapest material available today.

This Kyrock surface has been under traffic ten years, with no maintenance to date. It is apparently as good today as when laid. Kyrock is non-skid, non-reflecting and resilient. It is laid cold. Kyrock possesses many advantages which you should know about—

Write for particulars -- KENTUCKY ROCK ASPHALT CO., Incorporated, Louisville, Ky.

**Kyrock**  
The Uniform  
**Pavement**





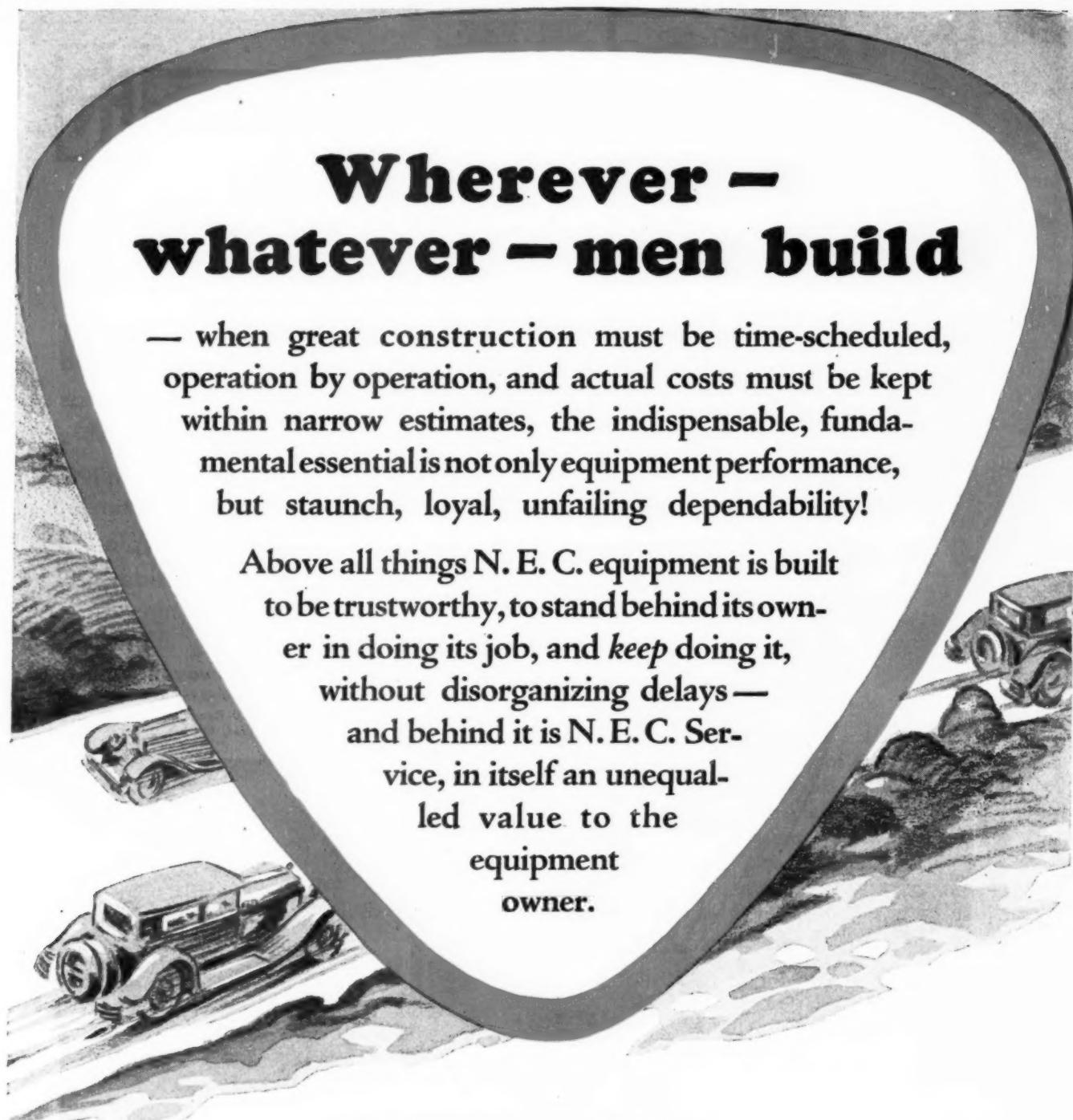
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— when great construction must be time-scheduled, operation by operation, and actual costs must be kept within narrow estimates, the indispensable, fundamental essential is not only equipment performance, but staunch, loyal, unfailing dependability!

Above all things N. E. C. equipment is built to be trustworthy, to stand behind its owner in doing its job, and *keep* doing it, without disorganizing delays — and behind it is N. E. C. Service, in itself an unequalled value to the equipment owner.



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Pavers, Mixers; Power Shovels, Pull Shovels, Cranes, Draglines; Dumptors.

### \*PARSONS

Trench Excavators, Backfillers.

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Portable Saw Rigs, Pumps, Hoists, Material Elevators.

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Tilting and Non-tilting Mixers, Pavers, Weigh-Mix.

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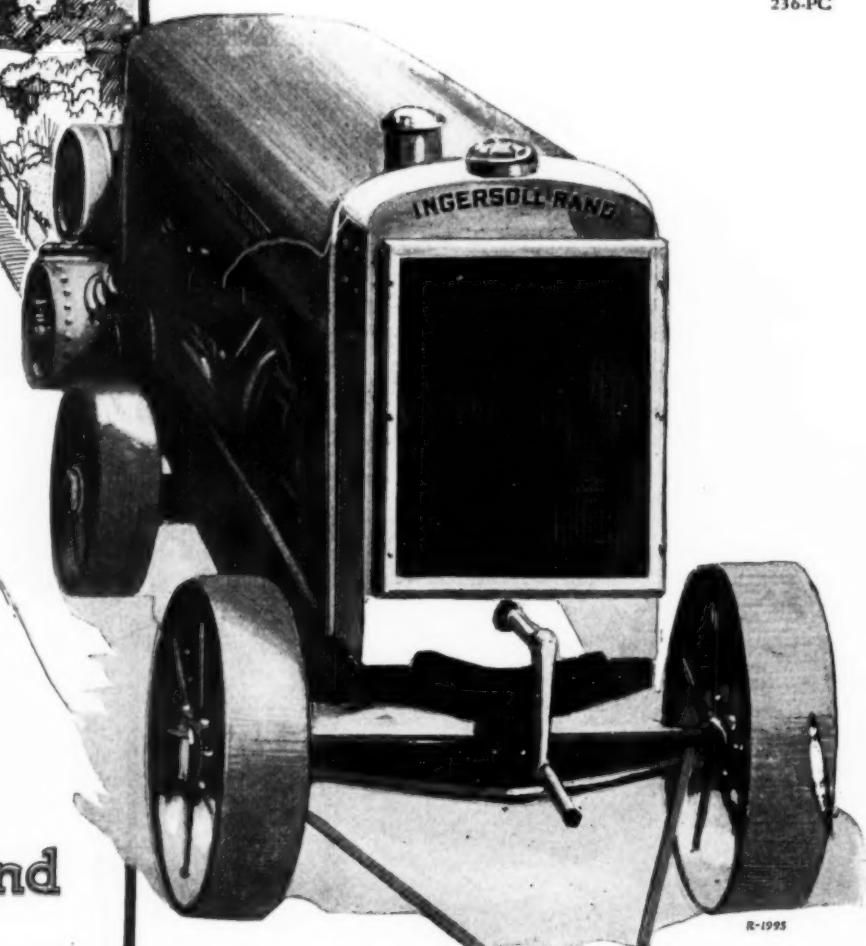
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*Branches or distributors in principal cities the world over  
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For extreme traction requirements, 6-inch wheel extensions are furnished to increase tire width to 16 inches



Adams wheel extensions provide plenty of traction for all practical working conditions

THREE outstanding features of Adams Motor Grader No. 101 distinguish it from all others—first, a remarkable rigidity due to a new frame construction which does not permit the frame to twist or weave, or the blade to rock sidewise; second, a design which gives more effective weight on the blade and scarifier than any other machine; third, a new type blade control which is easier working and 50% faster than others.

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Indianapolis, Ind.

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# Adams Motor Grader No. 101

## WITH McCORMICK-DEERING MODEL 20 TRACTOR

The ADAMS line includes graders in 6 1/2, 7, 8, 10, 12, and 14-foot blade lengths, Motor Graders, Scarifier Graders, Road Maintainers, Patrols, Drags, Elevating Graders, Dump Wagons, Wheeled Scrapers, Drag Scrapers, Fresnos, Plows, Grader Blades, Back Slopers, etc.

# 27

SMALL CITIES  
IN KENTUCKY  
ARE READY



Our industrial, commercial and engineering experts have made complete industrial surveys of 39 small cities and towns, and find 27 of them offer unusual opportunities for the location of certain classes of industrial operation. These experts will gladly aid you to investigate Kentucky sites for your plant, upon request.



## To A Hard-Boiled Industrial Optimist

Perhaps you are a hard-boiled industrial chief who has become entirely soured on high overhead, exorbitant taxes, congestion, labor troubles, rackets, shake-downs, and other disadvantages of plant operation in some big city.

Perhaps you believe there is a way out of it all. And indeed there is.

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*Cheap electric power*

*Cheap high-grade coal*

*Intelligent old-stock labor and  
no labor troubles*

*Favorable tax laws*

*Excellent transportation by  
rail, highway and water*

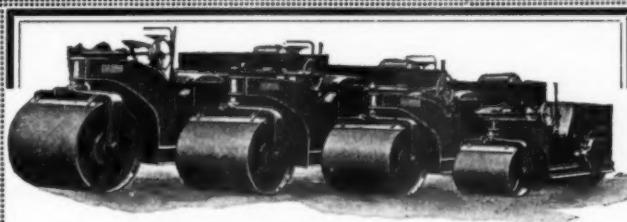
*A fine, mild climate*

*A huge prosperous market all  
around*

In fact, there are many such little cities. One of them probably would meet your requirements. If you decide to investigate and think we can help you, just write to—

**KENTUCKY UTILITIES  
COMPANY**  
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Serve Faithfully Under ALL Conditions

In the case of a road roller, every hour lost is a serious matter—particularly on time contracts. With Buffalo-Springfields on the job, there is a sense of security in their reliability exceedingly gratifying to the contractor, whether on maintenance or new construction.

Built in a wide range of weights and sizes, both three wheel and tandem, steam and motor driven.

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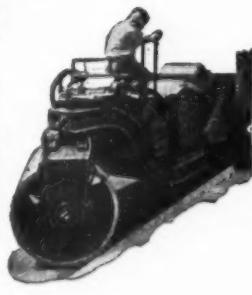
### "No honeycombing— and a smooth even pavement"

Contractors write us that there's no sinking or bridging with an ERIE Roller.

The reason is plain: The ERIE compacts the asphalt uniformly because  $\frac{2}{3}$  of the weight of this roller is concentrated over the compression roll.

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Erie, Pa.



**ERIE ROLLERS**  
SANE HIGH QUALITY

SEND FOR FREE CATALOG

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**HUBER** MOTOR ROLLERS



ACME ROAD MACHINERY  COMPANY, FRANKFORT, N.Y.

**ACME**  
Stone Crushers

ACME ROAD MACHY. CO. FRANKFORT, N.Y.



## "We Had No Idea!"

(Said Thousands!)

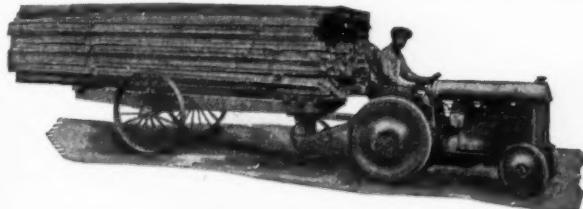
AMAZEMENT was in their eyes and expressions of astonishment leaped from their lips when more winter visitors this year than ever before, journeyed into the West Palm Beach farming areas.

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Nove Engine Co., Lansing, Mich.  
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Moyer Co., Tighman, Allentown, Pa.  
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Buckeye Traction Ditcher Co., Findlay, O.  
Harnischfeger Corp., Milwaukee, Wis.  
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Titusville Iron Works Co., Titusville, Pa.

Vogt Mch. Co., Henry, Louisville, Ky.

### —(Used.)

Delta Equipment Co., Philadelphia, Pa.

Randall Machinery Co., The, Cincinnati, O.

Zeinicker Supply Co., W. A., St. Louis.

### BOILER SETTINGS.

Harbison-Walker Refractories Co., Pittsbhg.

### —Tubes.

Boiler Tube Co. of America, Pittsburgh.

National Tube Co., Pittsburgh, Pa.

Ryerson & Son, Inc., Jos. T., St. Louis

and New York.

### —Tubes (Charcoal, Iron.)

Reading Iron Co., Reading, Pa.

### BOLTS, Rivets, Studs, Washers.

Bethlehem Steel Co., Bethlehem, Pa.

Progressive Mfg. Co., Torrington, Conn.

Republic Iron & Steel Co., Youngstown,  
Ohio.

Russell, Burdsall & Ward Bolt & Nut Co.,  
Port Chester, N. Y.

Ryerson & Son, Inc., Jos. T., St. Louis

and New York.

Virginia Bridge & Iron Co., Roanoke, Va.

### —(Track.)

Sweet's Steel Co., Williamsport, Pa.

### BOND BUYERS.

Garraway & Co., S. G., Chicago.

Hanchett Bond Co., Inc., The, Chicago.

Marx & Co., Birmingham, Ala.

Mercantile Trust Co., Baltimore, Md.

Nuveen & Co., John, Chicago, Ill.

Provident Savings Bank and Trust Co.,  
Cincinnati, Ohio.

Robinson-Humphrey Co., Atlanta, Ga.

Seasongood & Mayer, Cincinnati, Ohio.

Taylor, Wilson & Co., Inc., Cincinnati,  
Ohio.

### BORING (Core.)

Mott Core Drilling Co., Huntington,  
W. Va.

Pennsylvania Drilling Co., Pittsburgh, Pa.

Southern Drilling Co., Saltville, Va.

Sprague & Henwood, Inc., Scranton, Pa.

### BOXES (Paper.)

Old Dominion Box Co., Lynchburg, Va.

### BRASS GOODS.

Chase Brass & Copper Co., Waterbury,  
Conn.

Conn. and Brass Research Assoc., New  
York.

Mueller Co., Decatur, Ill.

### BRICK (Common Building.)

Friend & Co., Inc., Petersburg, Va.

### —(Face.)

Alabama Clay Prod. Co., Birmingham.

### —(Fire.)

Alabama Clay Prod. Co., Birmingham.

Cambray Clay Products Co., Blackforn, O.

Dee Co., Wm. E., Oak Hill, Ohio.

Taylor Sons Co., Charles, Cincinnati.

### —(Vitrified, Paving.)

National Paving Brick Mfrs. Asso., Wash-  
ington, D. C.

### —and Clayworking Machy.

Steel & Sons, J. C., Statesville, N. C.

### BRIDGE (Asphalt Planking.)

Servicised Premoulded Products, Inc.,  
Chicago, Ill.

### —Operating Machinery

Earle Gear & Machine Co., Phila., Pa.

### —Timber.

Amer. Creosoting Co., Louisville, Ky.

Industrial Lumber Co., Elizabeth, La.

### BRIDGES (Concrete.)

Atlantic Bridge Co., Greensboro, N. C.

### —(Creosoted Wood.)

Atlantic Bridge Co., Greensboro, N. C.

### —(Steel.)

American Bridge Co., New York, N. Y.

Atlantic Bridge Co., Greensboro, N. C.

Belmont Iron Works, Philadelphia, Pa.

Champion Bridge Co., Wilmington, O.

Converse Bridge & Steel Co., Chatta-  
nooga, Tenn.

Ingalls Iron Works Co., Birmingham, Ala.

McClintic-Marshall Co., Pittsburgh, Pa.

Nashville Bridge Co., Nashville, Tenn.</p

**(Ore Handling.)**  
Hayward Co., The, New York, N. Y.  
Howe Buckst Co., The, Cleveland, Ohio.  
Stuebner Iron Works, G. L., Long Island City, N. Y.

**BUILDERS and Contractors.**  
Barstow & Co., W. S., Reading, Pa.  
Moyer Co., Tighman, Allentown, Pa.  
Stone & Webster, Inc., Boston, Mass.  
Thompson & Bros., T. C., Charlotte, N. C.  
White Engineering Corp., J. G., New York.

**BUILDINGS (Industrial.)**  
Belmont Iron Works, Philadelphia, Pa.  
Blaw-Knox Co., Pittsburgh, Pa.  
Braden Steel Corp., Tulsa, Okla.  
Butler Mfg. Co., Kansas City, Mo.  
Maryland Metal Building Co., Balt., Md.  
McClintic-Marshall Co., Pittsburgh, Pa.  
Nashville Bridge Co., Nashville, Tenn.  
Truscon Steel Co., Youngstown, Ohio.  
Virginia Bridge & Iron Co., Roanoke, Va.

**(Portable Sheet Metal.)**  
Braden Steel Corp., Tulsa, Okla.  
Butler Mfg. Co., Kansas City, Mo.  
Maryland Metal Building Co., Balt., Md.

**BULKHEADS.**  
Shore-Line Builders, Inc., Jacksonville, Fla.  
Sauer Corp., Frederick, New York, N. Y.

**BULLDOZERS.**  
Beatty Machine & Mfg. Co., Hammond, Ind.  
Trackson Co., Milwaukee, Wis.

**BUSHINGS (Brass and Bronze.)**  
Moecasin Bushing Co., Chattanooga, Tenn.

**BUSINESS METHODS.**  
Ernst & Ernst, New York, N. Y.

**CABINETS (Steel.)**  
Angle Steel Stool Co., Plainwell, Mich.

**CABLES (Stud Link.)**  
Woodhouse Chain Works, Trenton, N. J.  
**— and Wire (Electric.)**  
American Steel & Wire Co., Balt., Md.  
Okonite Co., New York, N. Y.  
Roebling's Sons Co., John A., Trenton, N. J.  
Western Electric Co., New York City.

**CABLEWAYS (Overhead Suspension.)**  
Broderick & Basson Rope Co., St. Louis.  
Sauer Bros., Chicago, Ill.

**CALCIUM CHLORIDE.**  
Grasselli Chemical Co., Inc., Birmingham, Ala.  
Solvay Sales Corp., New York City.

**CAN and Box-Making Machinery (Tin.)**  
Bliss Co., E. W., Brooklyn, N. Y.  
Robins & Co., A. K., Baltimore, Md.

**CANNING MACHINERY.**  
Robins & Co., A. K., Baltimore, Md.

**CAR Loaders and Unloaders.**  
Barber-Greene Co., Aurora, Ill.  
Stephens-Adamson Mfg. Co., Birmingham, Ala.

**— Pullers.**  
Webster & Weller Mfg. Companies, Chicago, Ill.

**CARS (Dump, Industrial, Logging and Mine.)**  
Atlas Car & Mfg. Co., The, Cleveland, O.  
Eastern Car & Construction Co., Easton, Pa.  
Koppel Ind. Car & Equip. Co., Koppel, Pa.  
Southern Iron & Equipment Co., Atlanta.  
**— Steps (Safety.)**  
Irving Iron Works Co., Long Island City, N. Y.

**CASTERS (Truck.)**  
Service Caster & Truck Co., Albion, Mich.

**CASTINGS (Brass, Bronze and Aluminum.)**  
Inter-State Fdry. & Mach. Wks., Johnson City, Tenn.  
Moecasin Bushing Co., Chattanooga, Tenn.  
**— (Chilled Iron.)**  
Fuller Lehig Co., Fullerton, Penna.  
**— (Gray Iron.)**  
Columbian Iron Works, Chattanooga, Tenn.  
Fuller Lehig Co., Fullerton, Penna.  
Glamorgan Pipe & Fdry. Co., Lynchburg, Va.  
Hammond Iron Co., Birmingham, Ala.  
Inter-State Fdry. & Mach. Wks., Johnson City, Tenn.  
National Cast Iron Pipe Co., Birmingham, Ala.  
Rosencore Iron & Bridge Works, Inc., Roanoke, Va.  
Salem Fdry. & Mach. Wks., Salem, Va.  
U. S. Pipe & Foundry Co., Burlington, N. J.

**— (Malleable Iron and Steel.)**  
Timken Roller Bearing Co., Canton, O.  
**— (Semi-Steel.)**  
Salem Fdry. & Machine Works, Salem, Va.

**— (Steel.)**  
Bethlehem Steel Co., Bethlehem, Pa.  
Crucible Steel Casting Co., Lansdowne, Delaware Co., Pa.  
Deemer Steel Casting Co., New Castle, Del.  
Lunkenheimer Co., Cincinnati, Ohio.

**CEMENT (High Temperature.)**  
Harbison Walker Refractories Co., Pittsb.

**(Portland.)**  
Alpha Portland Cement Corp., Birmingham, Ala.  
Lehigh Portland Cement Co., New York.  
Louisville Cement Co., Louisville, Ky.  
Portland Cement Assn., Chicago, Ill.  
Universal Atlas Cement Co., New York.

**—Guns.**  
Cement-Gun Co., Inc., Allentown, Pa.

**—Machinery.**  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.

**CHAIN BLOCKS (See Blocks, Chain.)**

**CHAINS (Dredge, Quarry, Steam Shovel.)**  
Knoxville Iron Co., Knoxville, Tenn.  
Woodhouse Chain Works, Trenton, N. J.

**— (High Speed Roller.)**  
Diamond Chain & Mfg. Co., Indianapolis.

**— (Silent Drive.)**  
Diamond Chain & Mfg. Co., Indianapolis.  
Morse Chain Co., Ithaca, N. Y.

**— (Sprocket.)**  
Chain Belt Co., Milwaukee, Wis.  
Diamond Chain & Mfg. Co., Indianapolis.  
Morse Chain Co., Ithaca, N. Y.

**— (Welded.)**  
Woodhouse Chain Works, Trenton, N. J.

**CHAIRS (Opera and Theatre.)**  
Andrews Co., A. H., Chicago, Ill.  
Brunswick Seating Works, Lawrenceville, Va.

**— and Stools (Steel.)**  
Angle Steel Stool Co., Plainwell, Mich.

**CHEMICALS.**  
Grasselli Chemical Co., Inc., Birmingham, Ala.

**CHEMICAL TOILETS.**  
Kaustine Co., Inc., Perry, N. Y.

**CHEMISTS, CHEMICAL ENGINEERS (Analytical.)**  
Barrow-Agee Laboratories, Memphis, Tenn.  
Flood & Co., Walter H., Chicago, Ill.  
Froehling & Robertson, Inc., Richmond, Va.  
Hunt Co., Robert W., Chicago, Ill.  
Mels, Bassett & Slaughter, Phila., Pa.  
Picard Laboratories, The, Birmingham, Ala.  
Pittsburgh Testing Laboratories, Pittsburgh, Pa.  
Southwestern Laboratories, Fort Worth, Texas.  
Stillman & Van Siclen, New York.  
Wiley & Co., Inc., Baltimore, Md.

**— (Consulting, Paper Industry.)**  
Froehling & Robertson, Inc., Richmond, Va.

**CHIMNEYS (Concrete.)**  
Rust Engineering Co., Birmingham, Ala.

**— (Radial Brick.)**  
Rust Engineering Co., Birmingham, Ala.

**CHLORIDE ACCUMULATOR.**  
Electric Storage Battery Co., Phila., Pa.

**CHLORINATORS.**  
Rees, S. P., Atlanta.

**CIRCUIT BREAKERS.**  
I. T. E. Circuit Breaker Co., Phila., Pa.  
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.

**CITY AND TOWN PLANNING.**  
Draper, E. S., Charlotte, N. C.  
Ludlow Engineers, Winston-Salem, N. C.

**CLAMPS (Steel Column.)**  
Root Co., H. W., Cincinnati.

**CLEANERS (Metal, Waste, General.)**  
Oakite Products, Inc., New York, N. Y.

**CLOCKS (For all purposes.)**  
Kaiser Klock Co., L. E., Baltimore, Md.

**— (Watchman's Portable.)**  
Davis-Paradis Watchman's Clock Corp., New York, N. Y.  
Kaiser Klock Co., L. E., Baltimore, Md.

**CLUTCHES (Friction.)**  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Foote Bros. Gear and Mach. Co., Chicago.  
Wood's Sons Co., T. B., Chambersburg, Pa.

**COAL (Bituminous.)**  
Hammond Iron Co., Birmingham, Ala.  
Sloss-Sheffield Steel & Iron Co., Birmingham, Ala.  
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

**— and Ash-Handling Mch.**  
Allen-Sherman-Hoff Co., Phila., Pa.  
Chain Belt Co., Milwaukee, Wis.  
Hayward Co., The, New York, N. Y.  
Industrial Brownholst Corp., Cleveland, O.  
Northwest Engineering Co., Chicago.  
Stephens-Adamson Mfg. Co., Birmingham, Ala.  
Webster & Weller Mfg. Companies, Chicago, Ill.

**— Bunkers (Cast Iron.)**  
Allen-Sherman-Hoff Co., Phila., Pa.

**— Tipples.**  
American Bridge Co., New York, N. Y.  
Virginia Bridge & Iron Co., Roanoke, Va.

**COCKS (Service.)**  
Merco Nordstrom Valve Co., San Francisco.

**COKE.**  
Hammond Iron Co., Birmingham, Ala.  
Sloss-Sheffield Steel & Iron Co., Birmingham, Ala.  
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

**COLUMNS (Cast Iron.)**  
U. S. Pipe & Foundry Co., Burlington, N. J.

**COMPRESSORS (Gasoline Extraction.)**  
Sullivan Machinery Co., Chicago, Ill.

**CONCRETE (Accelerators.)**  
Solvay Sales Corp., New York City.

**— Block Machinery.**  
Blystone Mfg. Co., Cambridge Springs, Pa.

**— Block Pallets.**  
Commercial Shoring & Stamping Co., Youngstown, Ohio.

**— Construction (Reinforced.)**  
Cement-Gun Co., Inc., Allentown, Pa.  
Cement Gun Construction Co., Chicago.  
Rust Engineering Co., Birmingham, Ala.

**— Floor Slabs.**  
American Cement Tile Mfg. Co., Pittsburgh, Pa.

**— Information Only.**  
Portland Cement Assn., Chicago, Ill.

**— Mixers.**  
Blystone Mfg. Co., Cambridge Springs, Pa.  
Chain Belt Co., Milwaukee, Wis.  
Dunning & Borchert Press Co., Inc., Syracuse, N. Y.  
Jaeger Machine Co., Columbus, Ohio.  
Koehring Co., Milwaukee, Wis.  
Lansing Co., Lansing, Mich.

**— Pipe Machinery (See Pipe Machinery, Concrete.)**

**— Reinforcing Wire & Wire Fabric.**  
National Steel Fabric Co., Pittsburgh, Pa.

**— Road Curling.**  
McEverlast, Inc., Los Angeles, Cal.

**— Road Hardeners.**  
Solvay Sales Corp., New York City.

**— Road Reinforcing Fabric.**  
National Steel Fabric Co., Pittsburgh, Pa.

**— Roofing Tile.**  
American Cement Tile Mfg. Co., Pittsburgh, Pa.

**CONDENSERS.**  
Chicago Pneumatic Tool Co., New York.  
Ingersoll-Rand Co., New York, N. Y.  
Maniste Iron Works Co., Maniste, Mich.  
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.

**CONDUITS (Electric, Interior, Steel.)**  
Western Electric Co., New York City.  
Youngstown Sheet & Tube Co., Youngstown, Ohio.

**— (Wood.)**  
Meredith Co., William C., Atlanta.

**CONTRACTORS (Airports.)**  
Miller & Assoc., Wendell P., Chicago.

**— (Bridge.)**  
Kansas City Bridge Co., Kansas City, Mo.  
Sauer Corp., Frederick, New York.

**— (Drainage and Dredging.)**  
Arundel Corp., The, Baltimore, Md.  
Atlantic Gulf and Pacific Co., New York.

**— (Electrical.)**  
Industrial Electrical Co., Savannah, Ga.  
Walker Electrical Co., Atlanta, Ga.  
Webb Electric Co., Anderson, S. C.

**— (Foundations and Dams.)**  
Calligan & Co., A. H., Richmond, Va.  
Sauer Corp., Frederick, New York, N. Y.

**— (General.)**  
Angle-Blackford Co., Greensboro, N. C.  
Blair, Algernon, Montgomery, Ala.

**CONVEYING AND ELEVATING MACHINERY.**  
Barber-Greene Co., Aurora, Ill.  
Chain Belt Co., Milwaukee, Wis.  
McLanahan-Stone Machine Co., Hollidaysburg, Pa.  
Stephens-Adamson Mfg. Co., Birmingham, Ala.  
Sturtevant Mill Co., Boston, Mass.  
Universal Crusher Co., Cedar Rapids, Iowa.  
Webster & Weller Mfg. Companies, Chicago, Ill.

**COPING MACHINES.**  
Beatty Machine & Mfg. Co., Hammond, Ind.

**COPPER AND BRASS.**  
Chase Brass & Copper Co., Waterbury, Conn.  
Copper and Brass Research Assn., New York.

**CORRESPONDENCE SCHOOLS.**  
International Correspondence Schools, Scranton, Pa.

**COST SERVICE.**  
Le Baron, E. T., Jacksonville, Fla.

**COTTON GIN MACHINERY.**  
Continental Gin Co., Birmingham, Ala.

**—Mill Machinery.**  
Southern Spindle & Flyer Co., Inc., Charlotte, N. C.

**COUNTING APPARATUS.**  
Weeder-Roof, Inc., Hartford, Conn.

**COUPLINGS.**  
Golden's Fdy. & Mach. Co., Columbus, Ga.

**—(Shaft.)**  
Foot Bros. Gear & Machine Co., Chicago, Wood's Sons Co., T. B., Chambersburg, Pa.

**CRANES.**  
Austin Machinery Corp., Muskegon, Mich. Buckeye Traction Ditcher Co., Findlay, O. Northwest Engineering Co., Chicago, Ill. Ohio Power Shovel Co., Lima, Ohio. The Shovel Co., The Lorain, Ohio. Whiting Corp., Harvey, Ill.

**—(Cantilever, Gantry.)**  
Whiting Corp., Harvey, Ill.

**—(Crawler.)**  
Buckeye Traction Ditcher Co., Findlay, O. Harnischfeger Corp., Milwaukee, Wis. Northwest Engineering Co., Chicago, Ill. Ohio Power Shovel Co., Lima, Ohio. The Shovel Co., The Lorain, Ohio.

**—(Crawling Tractor.)**  
Northwest Engineering Co., Chicago, Ill. Ohio Power Shovel Co., Lima, Ohio. The Shovel Co., The Lorain, Ohio.

**—(Electric Traveling.)**  
Barnschaefer Corp., Milwaukee, Wis. Milwaukee Elec. Crane & Hoist Corp., Milwaukee, Wis.

Whiting Corp., Harvey, Ill.

**—(Full Circle Steam and Electric.)**  
Austin Machinery Corp., Muskegon, Mich. Northwest Engineering Co., Chicago, Ill. Ohio Power Shovel Co., Lima, Ohio. The Shovel Co., The Lorain, Ohio.

**—(Gasoline.)**  
Buckeye Traction Ditcher Co., Findlay, O. Harnischfeger Corp., Milwaukee, Wis. Industrial Brownhoist Corp., Cleveland, O. Northwest Engineering Co., Chicago, Ill. Ohio Power Shovel Co., Lima, Ohio. The Shovel Co., The Lorain, Ohio.

**—(Jib.)**  
Whiting Corp., Harvey, Ill.

**—(Locomotive.)**  
Bucyrus-Erie Co., Erie, Penna. Industrial Brownhoist Corp., Cleveland, O. Northwest Engineering Co., Chicago, Ill. Ohio Power Shovel Co., Lima, Ohio. The Shovel Co., The Lorain, Ohio.

**—(Material Handling.)**  
Bay City Shovels, Inc., Bay City, Mich. Industrial Brownhoist Corp., Cleveland, O. Northwest Engineering Co., Chicago, Ill. Ohio Power Shovel Co., Lima, Ohio. The Shovel Co., The Lorain, Ohio.

**—(Portable Floor.)**  
Beatty Machine & Mfg. Co., Hammond, Ind.

**—(Traveling, Hand Power.)**  
Harrington Co., The Philadelphia, Pa. Whiting Corp., Harvey, Ill.

**CRAWLERS (Tractor.)**  
Biddell Co., W. A., Bucyrus, Ohio. Trackson Co., Milwaukee, Wis.

**CREOSOTED MATERIALS.**  
Amer. Creosote Wks., Inc., New Orleans. Delaware Wood Preserving Co., Phila. Savannah Creosoting Co., Savannah, Ga.

**CREOSOTED TIMBER.**  
Ayer & Lord Tie Co., Chicago, Ill.

**CREOSOTE OIL.**  
Amer. Creosote Wks., Inc., New Orleans. Ayer & Lord Tie Co., Inc., Chicago.

**CREOSOTING (Wood Materials.)**  
Amer. Creosote Wks., Inc., New Orleans. Amer. Creosoting Co., Inc., Louisville, Ky. Delaware Wood Preserving Co., Phila. Eppinger & Russell Co., New York, N. Y. Gulf States Creos. Co., Hattiesburg, Miss. Prettyman & Sons, J. F., Charleston, S. C. Savannah Creosoting Co., Savannah, Ga. Taylor-Colquitt Co., Spartanburg, S. C. Wales Wood-Preserving Co., Norfolk, Va.

**CROSS-ARMS (Cresotted.)**  
Amer. Creosote Wks., Inc., New Orleans. Amer. Creosoting Co., Inc., Louisville, Ky. Savannah Creosoting Co., Savannah, Ga.

**—(Zinc Meta Arsenite Treated.)**  
Curtin-Howe Corp., New York, N. Y.

**CROSS-TIES (Creosoted.)**  
Amer. Creosote Wks., Inc., New Orleans. Amer. Creosoting Co., Inc., Louisville, Ky. Ayer & Lord Tie Co., Inc., Chicago. Eppinger & Russell Co., New York, N. Y. Prettyman & Sons, J. F., Charleston, S. C. Savannah Creosoting Co., Inc., Savannah, Ga. Taylor-Colquitt Co., Spartanburg, S. C.

**—(Zinc Meta Arsenite Treated.)**  
Curtin-Howe Corp., New York, N. Y.

**CRUSHED STONE (Road Concrete and Ballast.)**  
American Limestone Co., Knoxville, Tenn. Borley & Co., W. W., Roanoke, Va.

**CRUSHERS (Coal and Coke.)**  
Fuller Lehigh Co., Fullerton, Pa.

**—Rock.**  
Universal Crusher Co., Cedar Rapids, Iowa.

**CRUSHING and Pulverizing Machinery.**

Allis-Chalmers Mfg. Co., Milwaukee, Wis. Day Pulverizer Co., Knoxville, Tenn. Fuller Lehigh Co., Fullerton, Pa.

McLanahan-Stone Machine Co., Hollidaysburg, Pa.

Raymond Bros. Impact Pulverizer Co., Chicago, Ill.

Sturtevant Mill Co., Boston, Mass. Universal Crusher Co., Cedar Rapids, Iowa.

W-K-M Co., Inc., Houston, Texas.

**CULVERT PIPE (Cast Iron.)**  
Amer. Cast Iron Pipe Co., Birmingham. Cast Iron Pipe Research Assn., Chicago. Galion Iron Works & Mfg. Co., Galion, O. U. S. Pipe & Foundry Co., Burlington, N. J.

**—(Corrugated Metal.)**  
American Sheet & Tin Plate Co., Pittsburgh, Pa.

Armen Culvert Mfrs. Assn., Middletown, O.

Dixie Culvert & Metal Co., Atlanta, Ga.

Dixie Culvert Mfg. Co., Little Rock, Ark.

Galion Iron Works & Mfg. Co., Galion, O.

Louisiana Crr. Culvert Co., Baton Rouge, La.

Met. Culvert Co., Nashville, Tenn.

Western Metal Mfg. Co., Houston, Texas.

**CURB PROTECTORS (Steel Bars.)**  
National Steel Fabric Co., Pittsburgh, Pa. Truscon Steel Co., Youngstown, O.

**CUTTERS (Wire Rope.)**  
Loeschen & Sons Rope Co., A., St. Louis.

**CUTTING COMPOUNDS.**  
Oakite Products, Inc., New York, N. Y.

**CYLINDERS (Compressed Air, Gas.)**  
Janney, Jr., Jas. A., Phila., Pa.

National Tube Co., Pittsburgh, Pa.

**DERRICKS and Derrick Fittings.**  
Clyde Iron Works Sales Co., Duluth, Minn. Sargent Derrick Co., Chicago, Ill.

**DESKS (School.)**  
Andrews Co., A. H., Chicago, Ill.

**—(Steel Factory.)**  
Angle Steel Stool Co., Plainwell, Mich.

**DIGESTERS.**  
Swenson Evaporator Co., Harvey, Ill.

**DITCHING MACHINERY.**

Barber-Green Co., Aurora, Ill.

Bay City Shovels, Inc., Bay City, Mich.

Buckeye Traction Ditcher Co., Findlay, O.

Harnischfeger Corp., Milwaukee, Wis.

Hayward Co., The, New York, N. Y.

Industrial Brownhoist Corp., Cleveland.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Owen Bucket Co., The, Cleveland, O.

Parsons Co., Newton, Iowa.

**DOORS (Fire.)**

Merchant & Evans Co., Philadelphia, Pa.

Richards-Wilcox Mfg. Co., Aurora, Ill.

**—(Fireproof, Air Chamber.)**

Wilson Corp., The J. G., New York.

**—(Freight Elevator.)**

Peelle Co., The, Brooklyn, N. Y.

**—(Kalsamein.)**

Moesch-Elliott Co., Cincinnati.

**—(Rolling, Steel and Wood.)**

Kinnear Mfg. Co., The, Columbus, Ohio.

Mahan Co., R. C., Detroit, Mich.

Moesch-Elliott Co., Cincinnati.

Peelle Co., The, Brooklyn, N. Y.

Wilson Corp., The J. G., New York.

**—(Steel.)**

Detroit Steel Products Co., Detroit, Mich.

Truscon Steel Co., Youngstown, O.

**—(Tubular Steel.)**

Bayley Co., Wm., Springfield, O.

**DRAFTSMEN'S SUPPLIES.**  
Weber Co., Inc., F., Philadelphia, Pa.

**DRAGLINE EXCAVATORS.**  
Austin Machinery Corp., Muskegon, Mich.

Bucyrus-Erie Co., Erie, Penna.

**ELECTRIC LIGHTING.**

General Electric Vapor Lamp Co., Hoboken, N. J.

Harnischfeger Corp., Milwaukee, Wis. Koehring Co., Milwaukee, Wis. Monahan Mfg. Corp., Chicago, Ill. Northwest Engineering Co., Chicago, Ill. Ohio Power Shovel Co., Lima, Ohio. Sauer Bros., Chicago, Ill. The Shovel Co., The, Lorain, Ohio. Universal Power Shovel Co., Milwaukee, Wis.

**DREDGES (Dipper, Elevator, Hydraulic.)**

Bay City Shovels, Inc., Bay City, Mich.

Bucyrus-Erie Co., Erie, Pa.

Elliot Machine Corp., Baltimore, Md.

Morris Machine Wks., Baldwinsville, N. Y.

**DREDGING (River and Harbor Improvement.)**

Arundel Corp., The, Baltimore, Md.

Atlantic Gulf and Pacific Co., New York.

**—Machinery.**

American Steel Dredge Co., Fort Wayne, Ind.

Elliot Machine Corp., Baltimore, Md.

Hayward Co., The, New York.

**DRILLING CONTRACTORS.**

Mott Core Drilling Co., Huntington, W. Va.

Pennsylvania Drilling Co., Pittsburgh, Pa.

Southern Drilling Co., Saltville, Va.

Sprague & Henwood, Inc., Scranton, Pa.

**DRILLS (Artesian Well.)**

Virginia Machinery & Well Co., Inc., Richmond, Va.

**—(Electric.)**

Chicago Pneumatic Tool Co., New York.

Sullivan Mch. Co., Chicago.

**—(Pneumatic.)**

Chicago Pneumatic Tool Co., New York.

Ingersoll-Rand Co., New York, N. Y.

Sullivan Machinery Co., Chicago, Ill.

**DRINKING FOUNTAINS.**

Bundie-Spence Mfg. Co., Milwaukee, Wis.

**DRY-FORGING MACHINERY.**

Bliss Co., E. W., Brooklyn, N. Y.

**DRYERS (Gravel and Sand.)**

Ripley Fdy. & Mch. Co., Ripley, Ohio.

**DRY KILNS and Equipment.**

Moore Dry Kiln Co., Jacksonville, Fla.

**DRYING MACHINERY.**

American Process Co., New York, N. Y.

**DUMP TRUCK BODIES and HOISTS.**

Commercial Shearing & Stamping Co., Youngstown, Ohio.

Easton Car & Construction Co., Easton, Pa.

Lee Trailer & Body Co., Inc., Plymouth, Ind.

**DUSTPROOFING (Concrete.)**

Solvay Sales Corp., New York City.

Sonneborn Sons, Inc., L., New York.

**DYESTUFFS.**

Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.

**DYNAMITE (Industrial and Agricultural.)**

Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.

Hercules Powder Co., Inc., Wilmington, Del.

**ELECTRICAL Instruments and Supplies.**

Adams Electric Co., Frank, St. Louis.

Western Electric Co., New York City.

**—Machinery (Generators, Motors, etc., New.)**

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

Elliott Mch. Co., Miami, Fla.

Fairbanks Morse Co., Chicago, Ill.

Howell Electric Motors Co., Howell, Mich.

Rockford Power Mch. Co., Rockford, Ill.

Westinghouse Electric & Mfg. Co., E., Pittsburgh.

**—Machinery (Generators, Motors, etc., Used.)**

Belyea Co., Inc., New York City.

Delta Equipment Co., Philadelphia, Pa.

Electric Service Co., Cincinnati, Ohio.

Electrical Equip. Co., Raleigh, N. C.

Gregory Electric Co., Chicago.

Nashville Industrial Corp., Old Hickory, Tenn.

Nussbaum & Co., V. M., Ft. Wayne, Ind.

O'Brien Machinery Co., The, Phila., Pa.

Randi Machinery Co., The, Cincinnati, O.

Rockford Power Mch. Co., Rockford, Ill.

Stewart Elec. Co., John A., Cincinnati, O.

**—Machinery Repairing (Motors, Generators, etc.)**

Electric Service Co., Cincinnati, Ohio.

Gregory Electric Co., Chicago.

**ELECTRIC LIGHTING.**

General Electric Vapor Lamp Co., Hoboken, N. J.

**ELECTRIC SHOVELS (See Shovels.)**

**ELEVATOR Cables.**

Leschen & Sons Rope Co., A., St. Louis.

**—Enclosures.**

Dufur, Baggott & Co., Baltimore, Md.

**—(Equalizers.)**

Evans Elevator Equalizer Co., Bedford, Ind.

**ELEVATORS (Electric.)**

American Elevator & Machine Co., Inc., Louisville, Ky.

Milner Co., St. Louis, Mo.

Warsaw Elevator Co., Baltimore, Md.

**—(Hydraulic.)**

American Elevator & Machine Co., Inc., Louisville, Ky.

Warsaw Elevator Co., Baltimore, Md.

**—(Portable.)**

O. K. Clutch & Machy. Co., Columbia, Pa.

**—(Pneumatic.)**

American Pneumatic Tool Co., New York.

**—(Steel.)**

American Appraisal Co., Milwaukee, Wis.

Battley Engrs., Inc., Terrell, San Antonio, Texas.

Battley & Kipp, Inc., Chicago, Ill.

Fay, Spofford & Thorndike, Boston, Mass.

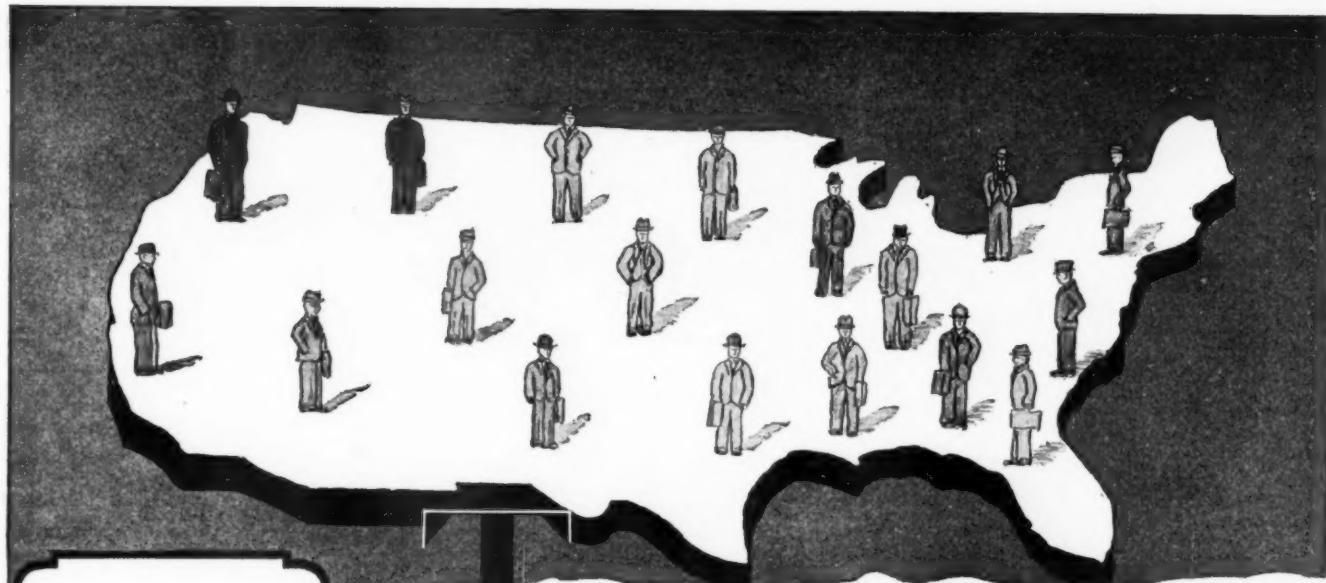
Ford, Bacon & Davis, Inc., New York.

Garnett, Seelye & Fleming, Inc., Harrisburg, Pa.

Jenny, L. Alfred, Dumont, N. J.

Lockwood Greene Engrs., Inc., New York City.

**—(Appraisal.)**



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Bylesby Engineering and Management Corp., Chicago, Ill.

Cooper & Co., Hugh L., New York, N. Y.  
Floyd & Lochridge, Dallas, Texas.  
Gardner & Howe, Memphis, Tenn.

Hardaway Contracting Co., Columbus, Ga.  
Harris, L. F., Chicago.

Hedrick Inc., Ira G., Hot Springs Nat'l. Park, Ark.

Lee, William S., Charlotte, N. C.  
Main, Inc., Chas. T., Boston, Mass.

Sirrine & Co., J. E., Greenville, S. C.

Tucker & Laxton, Charlotte, N. C.

Wheeler, Walter H., Minneapolis, Minn.

White Engr. Corp., J. G., New York.

**(Drainage and Irrigation.)**

Floyd & Lochridge, Dallas, Texas.  
Ford, Bacon & Davis, Inc., New York.  
Fuller & McClintock, New York, N. Y.

Hills Co., George B., Jacksonville, Fla.

Ludlow Engineers, Winston-Salem, N. C.

McCrady Co., The, Atlanta, Ga.

Wiedeman & Singleton, Inc., Atlanta, Ga.

White Engineering Corp., J. G., New York.

Greiner & Co., J. E., Baltimore, Md.  
Herty, Charles H., New York City.  
Hills Co., George B., Jacksonville, Fla.  
Lockwood Greene Engrs., Inc., New York

City.  
Main, Inc., Chas. T., Boston, Mass.  
Mees & Mees, Charlotte, N. C.

Morgan Constr. Co., Worcester, Mass.  
Muellergren, Arthur L., Kansas City, Mo.

Ophuls & Hill, Inc., New York, N. Y.  
Prescher & Co., Inc., G. Lloyd, Atlanta,

Sanderson & Porter, New York, N. Y.  
Schofield Engineering Co., Phila., Pa.

Sirrine & Co., J. E., Greenville, S. C.

Tucker & Laxton, Charlotte, N. C.

Wheeler, Walter H., Minneapolis, Minn.

White Engr. Corp., J. G., New York.

Williamson, Lee H., Charlottesville, Va.

—(Industrial Survey.)

Converse & Co., J. B., Mobile, Ala.

Herty, Charles H., New York City.

Lockwood Greene Engrs., Inc., New York

City.

Wadleigh & Bailey, Washington, D. C.

—(Inspection and Tests.)

Barrow-Ages Laboratories, Memphis, Tenn.

Conard & Busby, Burlington, N. J.

Flood & Smith, New York, N. Y.

Flood & Co., Walter H., Chicago, Ill.

Froehling & Robertson, Inc., Richmond,

Va.

Hunt Co., Robert W., Chicago, Ill.

Picard Laboratories, Birmingham, Ala.

Pittsburgh Testing Laboratories, Pitts-

burgh, Pa.

Southwestern Laboratories, Ft. Worth,

Texas.

—(Landscapes.)

Draper, E. S., Charlotte, N. C.

Kirby & Co., Raleigh, N. C.

McCrady Co., John, Charleston, S. C.

—(Lighting.)

Battay & Kipp, Inc., Chicago, Ill.

Bylesby Engineering & Management Corp., Chicago, Ill.

Ford, Bacon & Davis, Inc., New York.

General Electric Vapor Lamp Co., Hoboken, N. J.

Hoboken, N. J.

Hoover Engineering Co., Birmingham, Ala.

Invicta Engineering Co., Birmingham, Ala.

Lee, William S., Charlotte, N. C.

Lockwood Greene Engrs., Inc., New York

City.

Main, Inc., Chas. T., Boston, Mass.

Mees & Mees, Charlotte, N. C.

Meiss, Bassett & Slaughter, Phila., Pa.

Sanderson & Porter, New York, N. Y.

Wiley & Wilson, Lynchburg, Va.

—(Mining. See Engineers, Geological.)

—(Municipal.)

Battay & Kipp, Inc., Terrell, San Antonio, Texas.

Billingsley, James W., New Orleans, La.

Conover, Older & Quinlan, Inc., Chicago, Ill.

Dow & Smith, New York, N. Y.

Gannett, Seelye & Fleming, Inc., Harrisburg, Pa.

Harrub Engr. Co., C. N., Nashville, Tenn.

Hills Co., George B., Jacksonville, Fla.

Howerton Engineering Co., Asheville, N. C.

Knowles, Inc., Morris, Pittsburgh, Pa.

McCrary Co., The, J. B., Atlanta, Ga.

Turner, C. A. P., Minneapolis, Minn.

Virginia Bridge & Iron Co., Roanoke, Va.

—(Textile Mills.)

Lockwood Greene, Engrs., Inc., New York

City.

Main, Inc., Chas. T., Boston, Mass.

Sirrine & Co., J. E., Greenville, S. C.

—(Transmission Lines.)

Hoosier Engineering Co., Chicago, Ill.

—(Ventilating and Heating.)

Biggs Eng. Co., W. E., Knoxville, Tenn.

Wiley & Wilson, Lynchburg, Va.

—(Water Supply.)

Floyd & Lochridge, Dallas, Texas.

Pennington, J. B., Carson City, Nev.

—(Hoisting.)

Clyde Iron Works Sales Co., Duluth, Minn.

—(Marine.)

Fairbanks, Morse & Co., Chicago, Ill.

—(Oil.)

Ingersoll-Rand Co., New York, N. Y.

Continental Gin Co., Birmingham, Ala.

—(Steam.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

Cole Mfg. Co., R. D., Newnan, Ga.

Lefell & Co., The, James, Springfield, O.

Lombard Iron Works & Supply Co., Au-

gusta, Ga.

Morris Machine Works, Baldwinsville, N. Y.

Schofield's Sons Co., J. S., Macon, Ga.

—(Paving and Roads.)

Billingsley, James W., New Orleans, La.

Dow & Smith, New York, N. Y.

Freeland, Roberts & Co., Nashville, Tenn.

Harrub Engr. Co., C. N., Nashville, Tenn.

Howerton Engineering Co., Asheville, N. C.

Ludlow Engineers, Winston-Salem, N. C.

Platt, William M., Durham, N. C.

Spoon & Lewis, Greensboro, N. C.

White Co., Gilbert C., Durham, N. C.

—(Production.)

Schofield Engr. Co., Phila., Pa.

—(Public Service Properties.)

Bylesby Engineering & Management Corp., Chicago, Ill.

Cooper & Co., Hugh L., New York, N. Y.

Ford, Bacon & Davis, Inc., New York.

Fulmer & McClintock, New York, N. Y.

Gannett, Seelye & Fleming, Inc., Harrisburg, Pa.

Invicta Engineering Co., Phila., Pa.

Sirrine & Co., J. E., Greenville, S. C.

Tucker & Laxton, Charlotte, N. C.

White Engineering Corp., J. G., New York.

—(Railroad.)

Jenny, L. Alfred, Dumont, N. J.

Mees & Mees, Charlotte, N. C.

—(Reinforced Concrete Bridges, Buildings, etc.)

Atlantic Bridge Co., Greensboro, N. C.

Battay & Kipp, Inc., Chicago, Ill.

Fay, Spofford & Thordike, Boston, Mass.

Freeland, Roberts & Co., Nashville, Tenn.

Gardner & Howe, Memphis, Tenn.

Gannett & Co., J. E., Baltimore, Md.

Lockwood Greene Engrs., Inc., New York

City.

Main, Inc., Chas. T., Boston, Mass.

National Cast Iron Pipe Co., Birmingham, Ala.  
 Taylor Forge & Pipe Wks., Chicago, Ill.  
 U. S. Pipe & Foundry Co., Burlington, N. J.  
 Vogt Mch. Co., Henry, Louisville, Ky.  
 —and Flanged Fittings.  
 Grinnell Co., Inc., Providence, R. I.

**FLOOR (Asphalt Mastic.)**  
 Barber Asphalt Co., Philadelphia, Pa.  
 —(Asphalt Plank.)  
 Servicised Premoulded Products, Inc., Chicago, Ill.  
 —(Composition.)  
 Johns-Manville Corp., New York, N. Y.  
 —(Cork Composition.)  
 Congoleum-Nairn, Inc., Kearny, N. J.  
 —(Hardwood, Maple, Oak.)  
 Nashville Hardwood Flooring Co., Nashville, Tenn.  
 —(Northern Hard Maple.)  
 Holt Hardwood Co., Oconto, Wis.  
 —(Open Steel.)  
 Blaw-Knox Co., Pittsburgh, Pa.  
 Irving Iron Works Co., Long Is. City, N. Y.  
 Kerlow Steel Flooring Co., Jersey City, N. J.  
 —(Rubber and Cork.)  
 Congoleum-Nairn, Inc., Kearny, N. J.  
 —Anchors.  
 Bull Dog Floor Clip Co., Winterast, Iowa.  
 —Covering.  
 Congoleum-Nairn, Inc., Kearny, N. J.  
 —Hardeners (Concrete.)  
 Sonnenborn Sons, Inc., L. New York.  
 Stonhard Co., Phila., Pa.  
 —Plates and Stair Treads.  
 American Pressed Steel Co., Phila., Pa.  
 Central Iron & Steel Co., Harrisburg, Pa.  
 Ryerson & Son, Inc., Jos. T., St. Louis and New York.  
 —Steel (For Concrete Culverts, Roads, Streets.)  
 Blaw-Knox Co., Pittsburgh, Pa.  
 —Wax.  
 Congoleum-Nairn, Inc., Kearny, N. J.  
 —(Wood) Preservative.  
 Stonhard Co., Phila., Pa.

**FLUSH-TANK SIPHONS.**  
 Kaustine Co., Inc., Perry, N. Y.  
 Pacific Flush-Tank Co., New York, N. Y.

**FLYER PRESSERS.**  
 Southern Spindles & Flyer Co., Charlotte, N. C.

**FLYERS.**  
 Southern Spindles & Flyer Co., Charlotte, N. C.

**FORGINGS (Drop.)**  
 Vogt Mch. Co., Henry, Louisville, Ky.

**FORMS, Steel (For Concrete, Culverts, Roads, Streets, Curbs, Sidewalks, Tiles.)**  
 Blaw-Knox Co., Pittsburgh, Pa.

**FOUNDATION MASONRY.**  
 Calligan Co., A. H., Richmond, Va.

**FOUNDRIES and Machine Shops.**  
 Deemer Steel Casting Co., New Castle, Del.  
 General Machine Works, York, Pa.  
 Glamorgan Pipe & Fdry. Co., Lynchburg, Va.  
 Goldens' Fdry. & Mch. Co., Columbus, Ga.  
 Lombard Iron Works & Supply Co., Augusta, Ga.  
 Moccasin Bushing Co., Chattanooga, Tenn.

**FOUNDRY Equipment and Supplies.**  
 Chain Belt Co., Milwaukee, Wis.  
 Hill & Griffith Co., The, Cincinnati, O.  
 Whiting Corp., Harvey, Ill.  
 —Facings (Talc and Soap-stone.)  
 Hill & Griffith Co., The, Cincinnati, O.

**FUMIGATORS (Fruit, Nuts, Nursery Stock, etc.)**  
 Union Tank & Pipe Co., Los Angeles, Cal.

**FURNACES (Industrial.)**  
 Combustion Engr. Corp., New York City.  
 —(Water-Cooled.)  
 Combustion Engr. Corp., New York City.  
 Fuller Lehigh Co., Fullerton, Pa.

**GALVANIZED Products.**  
 Cattle & Bros., Jos. P., Philadelphia, Pa.  
 —Steel and Iron.  
 American Rolling Mill Co., Middletown, O.

American Sheet & Tin Plate Co., Pittsburgh, Pa.  
 Granite City Steel Co., Granite City, Ill.  
 Republic Iron & Steel Co., Youngstown, O.

**GALVANIZING (Hot Dip.)**  
 Bessemer Galvanizing Works, Birmingham, Cattle & Bros., Jos. P., Philadelphia, Pa.  
 Newport News Shipbuilding & Drydock Co., Newport News, Va.

**GARAGES (Metal.)**  
 Maryland Metal Building Co., Balt., Md.

**GARBAGE DISPOSAL SYSTEMS**  
 Sealcell Corp., New York, N. Y.

**GAS HOLDERS.**  
 Chicago Bridge & Iron Works, Atlanta, Ga.  
 —Producers.  
 Gas-O-Flame Stove Works, Port Deposit, Md.  
 Morgan Construction Co., Worcester, Mass.  
 Wood & Co., R. D., Philadelphia, Pa.

**GASOLINE and KEROSENE.**  
 Gulf Refining Co., Pittsburgh, Pa.

**GASOLINE SHOVELS (See Shovels.)**

**GATES (Automatic Drainage.)**  
 Armes Culvert Mfrs. Assn., Middletown, O.  
 Dixie Culvert & Metal Co., Atlanta, Ga.  
 Dixie Culvert Mfg. Co., Little Rock, Ark.  
 Louisiana Corr. Culvert Co., Baton Rouge, La.  
 Tenn. Metal Culvert Co., Nashville, Tenn.  
 Western Metal Mfg. Co., Houston, Texas.

**GAUGE GLASSES.**  
 Jenkins Bros., New York, N. Y.

**GEARS.**  
 DeLaval Steam Turbine Co., Trenton, N. J.  
 Earle Gear & Machine Co., Phila., Pa.  
 Foote Bros. Gear & Mch. Co., Chicago.  
 —Cut.  
 Ohio Gear Co., Cleveland, Ohio.  
 —(Worm Reduction.)  
 DeLaval Steam Turbine Co., Trenton, N. J.  
 Foote Bros. Gear and Mch. Co., Chicago.

**GENERATORS, MOTORS (New.)**  
 Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
 Howell Electric Motors Co., Howell, Mich.  
 Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

**(Used.)**  
 Belyea Co., Inc., New York City.  
 Electrical Equip. Co., Raleigh, N. C.  
 Gregory Electric Co., Chicago.  
 Nashville Ind. Corp., Old Hickory, Tenn.  
 Neusbaum & Co., V. M., Ft. Wayne, Ind.  
 O'Brien Machinery Co., Phila., Pa.  
 Randle Machinery Co., The, Cincinnati, O.  
 Stewart Elec. Co., John A., Cincinnati.

**GEOLOGISTS. (See Engineers, Geological.)**

**GLASS (Art.)**  
 Binswanger & Co., Memphis, Tenn.  
 Hires Turner Glass Co., Philadelphia, Pa.  
 —(Plate.)  
 Binswanger & Co., Inc., Memphis, Tenn.  
 Blue Ridge Glass Corp., Kingsport, Tenn.  
 Hires Turner Glass Co., Philadelphia, Pa.  
 —(Window.)  
 Blue Ridge Glass Corp., Kingsport, Tenn.  
 Hires Turner Glass Co., Philadelphia, Pa.  
 —(Wire.)  
 Blue Ridge Glass Corp., Kingsport, Tenn.  
 Hires Turner Glass Co., Phila., Pa.

**GRADERS (Elevating.)**  
 Adams Co., J. D., Indianapolis, Ind.  
 Caterpillar Tractor Co., San Leandro, Calif.  
 —(Leaning Wheel Road.)  
 Adams Co., J. D., Indianapolis, Ind.  
 Gallon Iron Works & Mfg. Co., Gallon, O.  
 —(One Man Motor.)  
 Adams Co., J. D., Indianapolis, Ind.  
 Gallon Iron Works & Mfg. Co., Gallon, O.  
 Riddell Co., W. A., Bucyrus, Ohio.  
 —(Turbine.)  
 Koehring Co., Milwaukee, Wis.

**GRAPHITE.**  
 Dixon Crucible Co., Jos., Jersey City, N. J.

**GRATES and Grate Bars.**  
 Schofield's Sons Co., J. S., Macon, Ga.  
 Vogt Machine Co., Henry, Louisville, Ky.

**GRATING (Area, Flooring, Sidewalk.)**  
 Blaw-Knox Co., Pittsburgh, Pa.  
 Hendrick Mfg. Co., Carbondale, Pa.

Irving Iron Works, Long Is. City, N. Y.  
 Kerlow Steel Flooring Co., Jersey City, N. J.

**GRAVEL (Roofing and Road.)**  
 American Limestone Co., Knoxville, Tenn.  
 Arundel Corp., The, Baltimore, Md.  
 Boxley & Co., W. W., Roanoke, Va.  
 Friend & Co., Inc., Petersburg, Va.

**GREASE Cups.**  
 Lunkenheimer Co., The, Cincinnati, O.

**GRILLES (Brass, Bronze, Steel, etc.)**  
 Manhattan Perforated Metal Co., Inc., Long Island City, N. Y.

**GRINDERS (Cylinder.)**  
 Hutto Engineering Co., Detroit, Mich.  
 —(Electric.)  
 Chicago Pneumatic Tool Co., New York.  
 —(Gypsum, Limestone, etc.)  
 Raymond Bros. Impact Pulv. Co., Chicago.

**GRINDING MACHINERY (Flexible Shaft.)**  
 Hutto Engineering Co., Detroit, Mich.  
 Strand & Co., N. A., Chicago, Ill.  
 —Wheels.  
 Carborundum Co., Niagara Falls, N. Y.

**GUARD RAIL (Road.)**  
 National Traffic Guard Co., Atlanta.

**GUNITE CONSTRUCTION.**  
 Cement-Gun Co., Inc., Allentown, Pa.  
 Cement Gun Construction Co., Chicago.  
 Gunite Conc. & Constr. Co., Kansas City.  
 Gunite Constr. Co., New York City.  
 Rust Engineering Co., Birmingham, Ala.

**GUNPOWDER.**  
 DuPont de Nemours & Co., Inc., E. L., Wilmington, Del.  
 Hercules Powder Co., Inc., Wilmington, Del.

**GUNS (Hydraulic.)**  
 Georgia Iron Works, Augusta, Ga.

**HANGARS (Airplane.)**  
 Blaw-Knox Co., Pittsburgh, Pa.  
 Braden Steel Corp., Tulsa, Okla.  
 Maryland Metal Bldg. Co., Balt., Md.

**HANGERS (Door, All Kinds.)**  
 Richards-Wilcox Mfg. Co., Aurora, Ill.  
 —(Line Shaft.)  
 American Pulley Co., Philadelphia, Pa.  
 Wood's Sons Co., T. B., Chambersburg, Pa.

**HARBOR IMPROVEMENTS.**  
 Arundel Corp., Baltimore, Md.  
 Atlantic, Gulf & Pacific Co., New York.

**HARDWARE (Door.)**  
 Richards-Wilcox Mfg. Co., Aurora, Ill.

**HEATERS (Asphalt.)**  
 Honhorst Co., Jos., Cincinnati, O.

**HEATING APPARATUS (Engineers and Contractors.)**  
 Grinnell Co., Inc., Providence, R. I.  
 Skinner Bros. Mfg. Co., St. Louis, Mo.

**HEATERS (Systems.)**  
 Clarcage Fan Co., Kalamazoo, Mich.  
 Skinner Bros. Mfg. Co., St. Louis, Mo.

**HOISTING MACHINERY.**  
 Clyde Iron Works Sales Co., Duluth, Minn.

**HOISTS (Air Portable.)**  
 Ingersoll-Rand Co., New York, N. Y.  
 Sullivan Machinery Co., Chicago, Ill.  
 —(Chain.)  
 Harrington Co. The, Philadelphia, Pa.  
 —(Electric.)  
 Clyde Iron Works Sales Co., Duluth, Minn.  
 Harnischfeger Corp., Milwaukee, Wis.  
 Milwaukee Elec. Crane & Hoist Corp., Milwaukee, Wis.  
 Mundy Hoisting Engine Co., J. S., Newark, N. J.  
 Novo Engine Co., Lansing, Mich.  
 O. K. Clutch & Machy. Co., Columbia, Pa.  
 Street Bros. Mch. Wks., Chattanooga, Tenn.  
 —(Gasoline.)  
 Clyde Iron Works Sales Co., Duluth, Minn.  
 Dake Engine Co., Grand Haven, Mich.  
 Mundy Hoisting Engine Co., J. S., Newark, N. J.  
 Novo Engine Co., Lansing, Mich.

**IRON.**  
 Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.  
 —(Ingot, For Culverts, etc.)  
 American Rolling Mill Co., Middletown, O.

**JOINTS (Pipe.)**  
 Leadite Co., The, Philadelphia, Pa.

**JOIST HANGERS.**  
 Duplex Hanger Co., Cleveland, Ohio.

**KETTLES (Pavers and Roofers.)**  
Honhorst Co., Jos., Cincinnati, O.

**LADDERS (Rolling.)**  
Myers & Bro. Co., The F. E., Ashland, O.

**(Wooden.)**  
Dayton Safety Ladder Co., Cincinnati, O.  
Patent Scaffolding Co., Chicago, Ill.

**LAMPS (Incandescent.)**  
General Electric Vapor Lamp Co., Hoboken, N. J.  
Western Electric Co., New York City.

**LATH (Metal.)**  
Ingalls Iron Works Co., Birmingham, Ala.

**LAWN FURNITURE (Wire.)**  
Dufur, Baggott & Co., Baltimore, Md.

**LIGHTING (Factory and Mill.)**  
General Electric Vapor Lamp Co., Hoboken, N. J.

**Fixtures (Electric.)**  
Western Electric Co., New York City.

**LININGS (Flue, Fire Clay.)**  
Lee Clay Products Co., Clearfield, Ky.  
Owensboro Sewer Pipe Co., Owensboro, Ky.

**(Tube Mill.)**  
Fuller Lehigh Co., Fullerton, Pa.

**LINOLEUM (Battleship, Jasper.)**  
Congoleum-Nairn, Inc., Kearny, N. J.

**LITHOGRAPHERS and ENGRAVERS.**  
Smith & Son Co., Oscar T., Baltimore, Md.  
Young & Selden Co., Baltimore, Md.

**LOADING and UNLOADING MACHINERY (Portable.)**  
Barber-Green Co., Aurora, Ill.  
Northwest Engineering Co., Chicago, Ill.

**LOCOMOTIVES (Compressed Air.)**  
Porter Co., H. K., Pittsburgh, Pa.

**(Electric.)**  
Cincinnati Car Corp. (Locomotive Div.), Cincinnati, Ohio.

**(Fireless Stored Steam.)**  
Porter Co., H. K., Pittsburgh, Pa.

**(Gasoline.)**  
Cincinnati Car Corp. (Locomotive Div.), Cincinnati, Ohio.  
Porter Co., H. K., Pittsburgh, Pa.  
Whitecomb Co., Geo. D., Rochelle, Ill.

**(Industrial.)**  
Birmingham Hall & Locomotive Co., Birmingham, Ala.  
Cincinnati Car Corp. (Locomotive Div.), Cincinnati, Ohio.  
Porter Co., H. K., Pittsburgh, Pa.  
Southern Iron & Equipment Co., Atlanta.  
Whitecomb Co., Geo. D., Rochelle, Ill.

**(Mining.)**  
Cincinnati Car Corp. (Locomotive Div.), Cincinnati, Ohio.  
Porter Co., H. K., Pittsburgh, Pa.  
Whitecomb Co., Geo. D., Rochelle, Ill.

**(Railway.)**  
Cincinnati Car Corp. (Locomotive Div.), Cincinnati, Ohio.  
Porter Co., H. K., Pittsburgh, Pa.  
Southern Iron & Equipment Co., Atlanta.  
Whitecomb Co., Geo. D., Rochelle, Ill.

**LOGGING MACHINERY.**  
Clyde Iron Works Sales Co., Duluth, Minn.

**LOOM PICK COUNTER**  
Weaver-Roof, Inc., Hartford, Conn.

**LUBRICANTS.**  
Dixon Crucible Co., Jos., Jersey City, N. J.  
Gulf Refining Co., Pittsburgh, Pa.

**LUBRICATORS, (Force Feed.)**  
Lunkenheimer Co., The, Cincinnati, O.

**LUBRICATION SYSTEMS.**  
Alemite Corp., Chicago, Ill.

**LUMBER (Ceiling, Flooring, Siding.)**  
Industrial Lumber Co., Elizabeth, La.  
**(Creosoted.)**

Amer. Creosote Wks., Inc., New Orleans, La.  
Amer. Creosoting Co., Inc., Louisville, Ky.  
Ayer & Lord Tie Co., Inc., Chicago.  
Delaware Wood Preserving Co., Phila.  
Eppinger & Russell Co., New York, N. Y.  
Gulf States Creos. Co., Hattiesburg, Miss.  
Prettyman & Sons, J. F., Charleston, S. C.  
Savannah Creos. Co., Savannah, Ga.

**(Heavy Construction, Pitch, Pine, etc.)**  
Industrial Lumber Co., Elizabeth, La.

**(Salt Treated.)**  
Meredith Co., William C., Atlanta.

**(Zinc Meta Arsenite Treated.)**  
Curtin-Hows Corp., New York City.

**MACHINERY (Special.)**  
Bliss Co., E. W., Brooklyn, N. Y.  
Earle Gear & Machine Co., Phila., Pa.  
Fernholz Machinery Co., St. Louis, Mo.  
General Machine Works, York, Pa.  
Whiting Corp., Harvey, Ill.

**and Supplies (New and Used.)**  
Beatty Machine & Mfg. Co., Hammond, Ind.

Belyea Co., Inc., New York City.  
Electric Service Co., Cincinnati, Ohio.

Equip. Sales & Rentals Co., Pittsburgh.

Heineken Engineering Corp., New York.

Marine Metal & Supply Co., New York.

Nashville Ind. Corp., Old Hickory, Tenn.

O'Brien Machinery Co., The, Phila., Pa.

Randall Machinery Co., The, Cincinnati, O.

Ryerson & Son, Inc., Jos. T., St. Louis

and New York.

Seyfert's Sons, Inc., L. F., Phila., Pa.

Zelnicker Supply Co., W. A., St. Louis.

**MACHINE TENDERS (Steel.)**  
Anglo Steel Stool Co., Plainwell, Mich.

**(Tools.)**  
Ryerson & Son, Inc., Jos. T., St. Louis

and New York.

**(Used.)**  
Delta Equipment Co., Philadelphia, Pa.

O'Brien Machinery Co., Phila., Pa.

**MAIL CHUTES.**

Cutler Mail Chute Co., Rochester, N. Y.

**MARBLE (Producers and Manufacturers.)**

Georgia Marble Co., Tate, Ga.

**METAL-CUTTING MACHINERY.**

Atkins & Co., E. C., Indianapolis, Ind.  
Earle Gear & Machine Co., Phila., Pa.

**Working Machinery.**

Bliss Co., E. W., Brooklyn, N. Y.

**METERS (Venturi and Pitot Tube Types.)**

Simplex Valve & Meter Co., Phila., Pa.

**METHANOL (Synthetic Methyl Alcohol.)**

Du Pont Ammonia Corp., Wilmington, Del.

**MILL MACHINERY and SUPPLIES.**

Lombard Iron Works & Supply Co., Augusta, Ga.

**MINING MACHINERY.**

McLanahan-Stone Machine Co., Hollidaysburg, Pa.

**MIXERS (Asphalt.)**

Erie Machine Shops, Erie, Pa.

**(Hot.)**

Koehring Co., Milwaukee, Wis.

**(Plaster.)**

Blystone Mfg. Co., Cambridge Springs, Pa.

Chain Belt Co., Milwaukee, Wis.

Dunning & Bouschart Press Co., Syracuse, N. Y.

Jaeger Machine Co., Columbus, Ohio.

**MORTAR MIXERS.**

Chain Belt Co., Milwaukee, Wis.

Jaeger Machine Co., Columbus, Ohio.

**Ingredient.**

Louisville Cement Co., Louisville, Ky.

**MOTORS (Electric.)**

Fairbanks, Morse & Co., Chicago, Ill.

Howell Electric Motors Co., Howell, Mich.

Western Electric Co., New York City.

Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

**(Gasoline.)**

Wisconsin Motor Co., Milwaukee, Wis.

**MOTOR TRUCKS.**

International Harvester Co., of America, Inc., Chicago, Ill.

**NAILS (Cut.)**

Reading Iron Co., Reading, Pa.

**and Spikes.**

American Steel & Wire Co., Balt., Md.

Gulf States Steel Co., Birmingham, Ala.

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

**PETROLEUM REFINERS.**

Gulf Refining Co., Pittsburgh, Pa.

**PHOSPHATE ACID.**

Davison Chemical Co., Baltimore, Md.

**(Machinery.)**

McLanahan-Stone Machine Co., Hollidaysburg, Pa.

**PIG-IRON.**

Hammond Iron Co., Birmingham, Ala.

Republic Iron & Steel Co., Youngstown, Ohio.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

**NATURAL GAS COMPANIES.**  
(Offering Industrial and Commercial Opportunities.)

Arkansas Natural Gas Corp., Shreveport, La.

**OIL (Fuel and Gas.)**

Gulf Refining Co., Pittsburgh, Pa.

**Cups.**

Lunkenheimer Co., The, Cincinnati, O.

**ORE-WASHING MACHINERY.**

Georgia Iron Works, Augusta, Ga.

McLanahan Stone Machine Co., Hollidaysburg, Pa.

**ORNAMENTAL BRONZE WORK.**

Heath Co., J. S., Waukegan, Ill.

**IRON WORK.**

Roanoke Iron & Bridge Wks., Roanoke, Va.

Snead Architectural Iron Works, Louisville, Ky.

Southern Engineering Co., Charlotte, N. C.

Stewart Iron Works Co., Cincinnati, O.

**PACKING (Asbestos, Metallic, Rubber, Leather, etc.)**

Jenkins Bros., New York, N. Y.

Johns-Manville Corp., New York, N. Y.

Republic Rubber Co., Youngstown, Ohio.

**PAINT (Aluminum.)**

Aluminum Co. of America, Pittsburgh, Pa.

**(Metal Surfaces.)**

Aluminum Co. of America, Pittsburgh, Pa.

Dixon Crucible Co., Jos., Jersey City, N. J.

**(Mill White, For Interior.)**

Aluminum Co. of America, Pittsburgh, Pa.

Sonneborn Sons, Inc., L., New York.

**(Preservative.)**

Cabot, Inc., Samuel, Boston, Mass.

Foster Co., Benjamin, Philadelphia, Pa.

**PANELBOARDS.**

Adam Elec. Co., Frank, St. Louis.

**PARTITIONS (Metal, Folding, Rolling.)**

Kinear Mfg. Co., The, Columbus, Ohio.

Lupton's Sons Co., David, Phila., Pa.

**(Sectionfold, Rolling, Wood.)**

Wilson Corp., The, J. G., New York.

**PATENT ATTORNEYS.**

Buck, Sterling P., Washington, D. C.

Coleman, Watson E., Washington, D. C.

Eaton, Paul B., Charlotte, N. C.

Susnett, Edward C., Washington, D. C.

Seymour & Bright, Washington, D. C.

**PATTERNS (Drawing, etc.)**

Haas Pattern Co., A. W., Atlanta, Ga.

**PAVING Blocks (Creosoted Wood.)**

American Creosote Works, New Orleans.

**Blocks (Rubber.)**

Servicized Premoulded Products, Inc., Chicago, Ill.

**Mixers (Concrete.)**

Koehring Co., Milwaukee, Wis.

**Plant (Asphalt.)**

Simplicity System Co., Chattanooga, Tenn.

**PENSTOCKS.**

Chicago Bridge & Iron Works, Atlanta.

Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Smith Co., S. Morgan, York, Pa.

**PERFORATED METAL.**

Chicago Perforating Co., Chicago, Ill.

Erie Perforating Co., Rochester, N. Y.

Harrington & King Perf. Co., Chicago.

Hendrick Mfg. Co., Carbondale, Pa.

Manhattan Perforated Metal Co., Inc., Long Island City, N. Y.

Mundt & Sons, Charles, Jersey City, N. J.

Nortmann-Duffke Co., Milwaukee, Wis.

**PETROLEUM REFINERS.**

Gulf Refining Co., Pittsburgh, Pa.

**PHOSPHATE ACID.**

Davison Chemical Co., Baltimore, Md.

**(Machinery.)**

McLanahan-Stone Machine Co., Hollidaysburg, Pa.

**PIG-IRON.**

Hammond Iron Co., Birmingham, Ala.

Republic Iron & Steel Co., Youngstown, Ohio.

Sloss-Sheffield Steel & Iron Co., Birmingham, Ala.  
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

**PILE SHOES.**

Janney, Jr., Jos. A., Phila., Pa.

**PILING (Creosoted.)**

Amer. Creosote Wks., Inc., New Orleans.

Amer. Creosoting Co., Inc., Louisville.

Ayer & Lord Tie Co., Inc., Chicago.

Prettyman & Sons, J. F., Charleston, S. C.

Savannah Creosoting Co., Inc., Savannah.

Wales Wood-Preserving Co., Norfolk, Va.

**PIPE.**

Albert & Davidson Pipe Corp., Brooklyn, N. Y.

Albert Pipe Sup. Co., Inc., Brooklyn, N. Y.

Birmingham Boller & Engr. Co., Birmingham, Ala.

Central Pipe & Sup. Co., Charleston, W. Va.

Greenpoint Iron & Pipe Co., Inc., Brooklyn, N. Y.

Hammond Iron Co., Birmingham, Ala.

Hudson Pipe & Sup. Co., Bayonne, N. J.

National Tube Co., Pittsburgh, Pa.

Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.

Power Piping Co., Pittsburgh, Pa.

Smith Corp., A. O., Milwaukee, Wis.

**(Cast Iron.)**

Amer. Cast Iron Pipe Co., Birmingham.

Cast Iron Pipe Research Assn., Chicago.

Central Foundry Co., The, New York, N. Y.

Giammaro Pipe & Fdry. Co., Lynchburg, Va.

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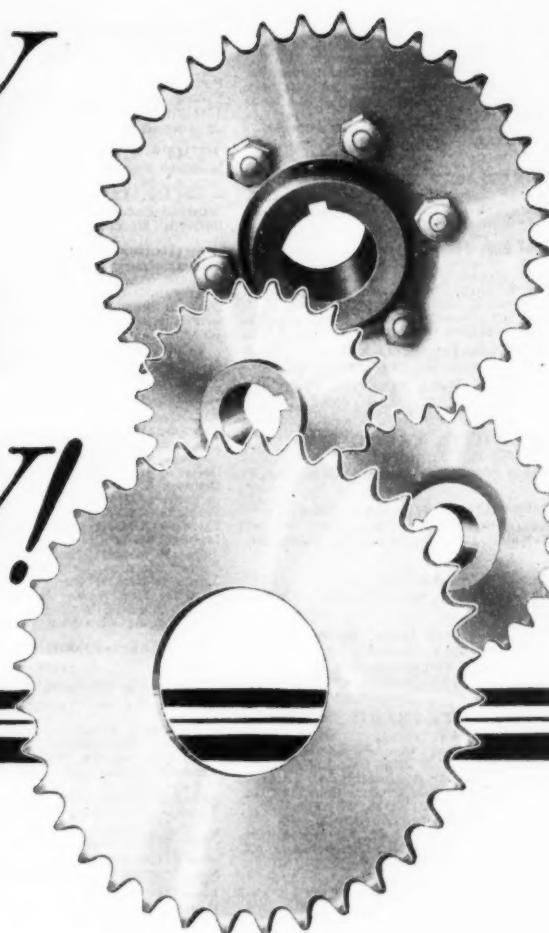
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Hanson & Son, Inc., Jos. T., St. Louis  
and New York.  
Tennessee Coal, Iron & Railroad Co., Birmingham.

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Amer. Creosote Wks., Inc., New Orleans.  
Amer. Creosoting Co., Inc., Louisville, Ky.  
Ayer & Lord Tie Co., Inc., Chicago.  
Protzman & Sons, J. F., Charleston, S. C.  
Savannah Creosoting Co., Savannah, Ga.  
Taylor-Colquitt Co., Spartanburg, S. C.

**(Tubular, Steel.)**

National Tube Co., Pittsburgh, Pa.  
(Zinc Meta Arsenite Treated.)

Curtin-Hows Corp., New York City.

**POLISHING MACHINERY.**

(Wheels, Blocks.)  
Carborundum Co., Niagara Falls, N. Y.

**PORTABLE HOUSES (Metal.)**

Braden Steel Corp., Tulsa, Okla.  
Maryland Metal Building Co., Baltimore, Md.

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Duplex Hanger Co., Cleveland, Ohio.

**POSTS (Cast Iron, Railway and Highway.)**

U. S. Pipe & Foundry Co., Burlington,  
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Morse Chain Co., Ithaca, N. Y.  
O'Brien Machinery Co., Phila., Pa.  
Schofield's Sons Co., J. B., Mass., Ga.  
Wood's Sons Co., T. B., Chambersburg, Pa.

**PREHEATERS (Air.)**

Combustion Engr. Corp., New York City.

**PRESSES, (Baling, Cottonseed Oil, Hydraulic and Power.)**

Dunning & Boschert Press Co., Inc.,  
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Ripley Foundry & Machine Co., Ripley, O.

**(Hydraulic Wheel.)**

Inter-State Fdry. & Mach. Wks., Johnson  
City, Tenn.

**(Metal Stamping.)**

Bliss Co., E. W., Brooklyn, N. Y.

**PRINTERS (Book, Catalog, Job.)**

Smith & Son Co., Oscar T., Baltimore Md.  
Young & Selden Co., Baltimore, Md.

**PRODUCER (Gas Machines.)**

Gas-O-Flame Stove Works, Port Deposit,  
Md.  
Morgan Construction Co., Worcester, Mass.  
Wood & Co., B. D., Phila., Pa.

**PULLER-JACKS.**

Estatele Co., T. H., Pittsburgh, Pa.

**PULLEYS (Friction Clutch.)**

Caldwell Co., Inc., W. E., Louisville, Ky.  
Wood's Sons Co., T. B., Chambersburg, Pa.

**(Motor and Machine.)**

American Pulley Co., Philadelphia, Pa.

**(Steel Split.)**

American Pulley Co., Phila., Pa.

**Shafting and Hangers.**

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Fette Bros. Gear & Mfg. Co., Chicago.  
Golden's Fdry. & Mfg. Co., Columbus, Ga.  
Wood's Sons Co., T. B., Chambersburg, Pa.

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Combustion Engr. Corp., New York City.  
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Whiting Corp., Harvey, Ill.

**PULVERIZERS (See Crushing and Pulverizing Machinery.)****PUMPING MACHINERY.**

American Well Works, Aurora, Ill.  
Cameron, A. S., Steam Pump Works  
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Chain Belt Co., Milwaukee, Wis.  
Cook, Inc., J. D., Lawrenceburg, Ind.  
Fairbanks Morse & Co., Chicago, Ill.  
Ingersoll-Rand Co. (A. S. Cameron Steam  
Pump Works), New York, N. Y.  
Keystone Pump & Drill Co., Beaver Falls,  
Pa.

Luitwieler Pumping Engine Co., Rochester, N. Y.  
Myers & Bro. Co., The F. E., Ashland, Ohio.

Platt Iron Works, Dayton, Ohio.  
Viking Pump Co., Cedar Falls, Iowa.  
Virginia Mch. & Well Co., Richmond, Va.

**PUMPS (Air.)**

Manistee Iron Works Co., Manistee, Mich.  
(Air Lift.)  
Ingersoll-Rand Co., New York, N. Y.  
Sullivan Machinery Co., Chicago, Ill.

**(Boiler Feed.)**

Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Cameron, A. S., Steam Pump Works  
(Ingersoll-Rand Co.), New York City.  
DeLaval Steam Turbine Co., Trenton, N. J.  
Erie Pump & Engine Wks., Medina, N. Y.  
Ingersoll-Rand Co. (A. S. Cameron Steam  
Pump Works), New York, N. Y.

Manistee Iron Works Co., Manistee, Mich.  
Myers & Bro. Co., The F. E., Ashland, O.

**(Centrifugal.)**

Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
American Well Works, Aurora, Ill.  
Cameron, A. S., Steam Pump Works  
(Ingersoll-Rand Co.), New York City.

DeLaval Steam Turbine Co., Trenton, N. J.  
Emerson Pump & Valve Co., Alexandria,  
Va.

**(Contractors.)**

Emerson Pump & Valve Co., Alexandria,  
Va.

Erie Pump & Engine Wks., Medina, N. Y.

Novo Engine Co., Lansing, Mich.

**(Deep Well.)**

American Well Works, Aurora, Ill.  
Cook, Inc., A. D., Lawrenceburg, Ind.

Keystone Pump & Drill Co., Beaver  
Falls, Pa.

Layne & Bowler, Inc., Memphis, Tenn.

Luitwieler Pumping Engine Co., Rochester,  
N. Y.

Novo Engine Co., Lansing, Mich.

**(Diaphragm.)**

Novo Engine Co., Lansing, Mich.

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Platt Iron Works, Dayton, Ohio.

Sterling Engine Co., Buffalo, N. Y.

**(Pulverized Coal.)**

Fuller Lehigh Co., Fullerton, Pa.

**(Rotary.)**

Viking Pump Co., Cedar Falls, Iowa.

**(Sand and Dredging.)**

Ellicott Machine Corp., Baltimore, Md.

Erie Pump & Engine Wks., Medina, N. Y.

Georgia Iron Works, Augusta, Ga.

**(Steam.)**

Cameron, A. S., Steam Pump Works  
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Emerson Pump & Valve Co., Alexandria,  
Va.

Fairbanks Morse & Co., Chicago, Ill.

Ingersoll-Rand Co. (A. S. Cameron Steam  
Works), New York, N. Y.

Platt Iron Works, Dayton, Ohio.

**(Vacuum.)**

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Chicago Pneumatic Tool Co., New York.

Ingersoll-Rand Co., New York, N. Y.

Sullivan Machinery Co., Chicago, Ill.

**(Water Works.)**

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Layne & Bowler, Inc., Memphis, Tenn.

Manistee Iron Works Co., Manistee, Mich.

**PUNCHING and SHEARING MACHINERY.**

Beatty Machine & Mfg. Co., Hammond,  
Ind.

Bliss Co., E. W., Brooklyn, N. Y.

Whitney Metal Tool Co., Rockford, Ill.

**BACK RAKES.**

Newport News Shipbuilding & Drydock  
Co., Newport News, Va.

**RADIATOR ENCLOSURES.**

Manhattan Perforated Metal Co., Inc.,  
Long Island City, N. Y.

**RAILINGS (Iron Pipe.)**

Pipe Railing Constr. Co., Long Island  
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**and Grilles, Iron and Brass,  
(Banks and Offices.)**

Dufur, Baggett & Co., Baltimore, Md.

Ludlow Saylor Wire Co., The St. Louis,  
Mo.

**RAILROAD Equipment and Sup-**

**plies (New.)**

Robinson & Orr, Pittsburgh, Pa.

Whiting Corp., Harvey, Ill.

**Equipment and Supplies  
(Used.)**

Birmingham Rail & Loco. Co., Birmingham.  
Equip. Sales & Rentals Co., Pittsburgh.

Levi & Co., Henry, Philadelphia, Pa.  
Smith & Co., W. M., Birmingham, Ala.  
Southern Iron and Equip. Co., Atlanta.

Zelnicker Supply Co., W. A., St. Louis.

**(Frogs and Switches.)**

Bethlehem Steel Co., Bethlehem, Pa.

Koppel Ind. Car & Equip. Co., Koppel,  
Pa.

Robinson & Orr, Pittsburgh, Pa.

**Kentucky Rock Asphalt Co., Louisville,  
Ky.**

Sloss-Sheffield Steel and Iron Co., Birmingham, Ala.

Truscon Steel Co., Youngstown, O.

Woodstock Slag Corp., Birmingham, Ala.

**Graders and Scrapers.**

Aeneo Road Mchry. Co., Frankfort, N. Y.

Adams Co., J. D., Indianapolis, Ind.

Austin-Western Road Mchry. Co., Chicago.

Caterpillar Tractor Co., San Leandro, Cal.

**Oils and Preservatives.**

Gulf Refining Co., Pittsburgh, Pa.

**Reinforcement (Welded  
Fabric.)**

American Steel & Wire Co., Balto., Md.

National Steel Fabric Co., Pittsburgh, Pa.

**Rollers (Steam and Gasoline.)**

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Austin-Western Road Mchry. Co., Chicago.

Buffalo-Springfield Roller Co., Springfield,  
O.

Erie Machine Shops, Erie, Pa.

Galloway Iron Works & Mfg. Co., Galion, O.

Huber Mfg. Co., The Marion, Ohio.

**Rollers (For Concrete Work.)**

Macon Concrete Roller Co., Macon, Ga.

**Scarfifiers.**

Austin-Western Road Mchry. Co., Chicago.

Buffalo-Springfield Roller Co., Springfield,  
O.

**and Siding (Composition.)**

Eternit, Inc., St. Louis, Mo.

Johns-Manville Corp., New York, N. Y.

**and Siding (Metal.)**

American Rolling Mill Co., Middletown, O.

American Sheet and Tin Plate Co., Pitts-

burgh, Pa.

Moesch-Edwards Corp., Cincinnati, O.

Pidgeon-Thomas Iron Co., Memphis, Tenn.

Republie Iron & Steel Co., Youngstown, O.

Robertson Co., H. B., Pittsburgh, Pa.

Ryerson & Son, Jos. T., St. Louis and  
New York.

Truscon Steel Co., Youngstown, O.

Youngstown Sheet and Tube Co., Young-

town, O.

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Flat, Channel Glass.)**

American Cement Tile Mfg. Co., Pitts-

burgh, Pa.

**Tiles.**

Amer. Cement Tile Mfg. Co., Pittsburgh.

**ROPE (Manila, Sisal, Hemp, etc.)**

Broderick & Bascom Rope Co., St. Louis.

**Drives.**

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Lufkin Rule Co., Saginaw, Mich.

**SAND.**

Arundel Corp., Baltimore, Md.

Friend & Co., Inc., Petersburg, Va.

**SANITARY Drinking Fountains.**

Rundie-Spence Mfg. Co., Milwaukee, Wis.

**SASH (Industrial.)**

Detroit Steel Products Co., Detroit, Mich.

Truscon Steel Co., Youngstown, O.

**(Operating Devices.)**

Detroit Steel Products Co., Detroit, Mich.

**(Steel.)**

Detroit Steel Products Co., Detroit, Mich.

**(Steel, Basement, Ventilating.)**

Detroit Steel Products Co., Detroit, Mich.

**SAWMILL Machinery.**

Schofield's Sons Co., J. S., Macon, Ga.

**SAWS.**

Atkins & Co., Inc., B. C., Indianapolis.

**(Cold Metal.)**

Earle Gear and Machine Co., Phila., Pa.

**(Hack.)**

Atkins & Co., Inc., E. C., Indianapolis.

**(Portable, Electric, Hand.)**

Wappat, Incorporated, Pittsburgh, Pa.

**SCAFFOLDING (Wooden.)**

Patent Scaffolding Co., Chicago, Ill.

**SCALES (Industrial, Platform.)**

American Kron Scale Co., New York

**City.****(Textile.)**

American Kron Scale Co., New York

City.

**SCHOOLS (Correspondence.)**

International Correspondence Schools,

<b>SCOOPS (Hand.)</b> American Mfg. Co., Chattanooga, Tenn. —Wheeled. Riddell Co., W. A., Bucyrus, Ohio.	Youngstown Sheet & Tube Co., Youngstown, O.	Morse Chain Co., Ithaca, N. Y. Stephens-Adamson Mfg. Co., Birmingham, Ala.	Butler Mfg. Co., Kansas City, Mo. Carolina Steel & Iron Co., Greensboro, N. C.
<b>SCRAPERS (Drag and Wheel.)</b> Adams Co., J. D., Indianapolis, Ind. Austin-Western Road Mchry. Co., Chicago. Galion Iron Works & Mfg. Co., Galion, O. Sauerman Bros., Chicago, Ill.	Ambler Asbestos Shingle & Sheathing Co., Ambler, Pa. Eternit, Inc., St. Louis, Mo.	SPIKES, (Railroad, Ship.) Bethlehem Steel Co., Bethlehem, Pa. Republic Iron & Steel Co., Youngstown, O. Sweet's Steel Co., Williamsport, Pa.	Champion Bridge Co., Wilmington, O. Eichleay, Jr., Co., John, Pittsburgh. Ingalls Iron Works Co., Birmingham, Ala. McClinic-Marshall Co., Pittsburgh, Pa. Phoenix Iron Co., The, Phila., Pa. Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
<b>SCRAP IRON AND STEEL.</b> Hunts Sons, M. J., Philadelphia, Pa. Perry, Buxton, Doane Co., Philadelphia. Smith & Co., W. M., Birmingham, Ala.	Lupton's Sons Co., David, Phila., Pa.	SPRINGS (Machinery, Railway, Spiral Steel.) American Steel & Wire Co., Balte., Md. Raymond Mfg. Co., Corry, Pa.	Richmond Struc. Steel Co., Richmond, Va. Virginia Bridge & Iron Co., Roanoke, Va. —Forms (Curb, Gutter, Sidewalk, Road.) Blaw-Knox Co., Pittsburgh, Pa.
<b>SCREENING (For Concrete and Road Construction.)</b> American Limestones Co., Knoxville, Tenn.	SHINGLES (Asbestos.) Ambler Asbestos Shingle & Sheathing Co., Ambler, Pa. Eternit, Inc., St. Louis, Mo.	—(Wire—All Kinds.) American Steel & Wire Co., Balte., Md.	—Plate Construction (Riveted or Welded.) Bigg Boiler Works Co., Akron, Ohio. Birmingham Boiler & Engr. Co., Birmingham, Ala. Carolina Steel & Iron Co., Greensboro, N. C.
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<b>SCREW-Machine Products.</b> Progressive Mfg. Co., Torrington, Conn.	SILICATE OF SODA. Grasselli Chemical Co., Inc., Birmingham, Ala.	STAINS (Shingle, Woodwork.) Cabot, Inc., Samuel, Boston, Mass.	—Tank Heads. Commercial Shearing & Stamping Co., Youngstown, Ohio.
<b>SCREWS (Machine.)</b> Progressive Mfg. Co., Torrington, Conn.	SITES (Agricultural.) West Palm Beach, City of, West Palm Beach, Fla.	STAIR Steps (Safety.) Irving Iron Works Co., Long Is. City, N.Y. —Treads. Central Iron & Steel Co., Harrisburg, Pa.	STENCIL CUTTING MACHINES. Diagrap Stencil Machine Corp., St. Louis, Mo.
<b>SEATING (Churches, Schools, Halls, etc.)</b> Brunswick Seating Works, Lawrenceville, Va.	—(Manufacturing.) Alabama Power Co., Birmingham, Ala. Arkansas Natural Gas Corp., Shreveport, La. Atlanta and West Point R. R., Atlanta, Atlanta, Ga., Industrial Bureau C. of C. Brown & Co., Chattanooga, Tenn. Central of Georgia Rwy., Savannah, Ga. Central Power & Light Co., San Antonio, Galveston City of, Galveston, Texas. Georgia Power Co., Atlanta, Ga. Industrial Dallas, Inc., Dallas, Texas. Jacksonville, City of Jacksonville, Florida. Kentucky Utilities Co., Louisville, Ky. Missouri-Kansas-Texas Lines, Dallas, Texas. Missouri-Pacific Lines, St. Louis, Mo. Modell Land Company, (Flagler System), St. Augustine, Fla. New Orleans Assn. of Commerce, New Orleans, La. Norfolk & Western Railway, Roanoke, Va. Oklahoma City Chamber of Commerce, Oklahoma City, Okla. Tennessee Central Railway, Nashville, Tenn. Texas Power & Light Co., Dallas, Texas.	STAMPING (Sheet Metal.) American Pulley Co., Philadelphia, Pa. —Steel (All Kinds.) Commercial Shearing & Stamping Co., Youngstown, Ohio.	STOKERS (Mechanical.) Babcock & Wilcox Co., The, New York. Combustion Engr. Corp., New York City. Whiting Corp., Harvey, Ill.
<b>SEAWALLS.</b> Shore-Line Builders, Inc., Jacksonville, Fla.	SKYLIGHTS. Milwaukee Corrugating Co., Milwaukee, Wis. Robertson Co., H. H., Pittsburgh, Pa.	STANDPIPES. Chattanooga Boiler & Tank Co., Chattanooga, Tenn. Chicago Bridge & Iron Works, Atlanta, Ga. Hammond Iron Works, Warren, Pa. Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.	STORAGE Batteries. Electric Storage Battery Co., Philadelphia. —Bins (Steel.) Blaw-Knox Co., Pittsburgh, Pa. Butler Bin Co., Waukesha, Wis.
<b>SEPARATORS (Air.)</b> Sturtevant Mill Co., Boston, Mass. —(Dust.) Raymond Bros., Impact Pulv. Co., Chicago.	SEWAGE Disposal Apparatus. Kaunitz Co., Inc., Perry, N. Y. Pacific Flush-Tank Co., New York, N. Y.	STATIONERS (Envelopes, Letter and Billheads, etc.) Smith & Son Co., Oscar T., Baltimore, Md. Young & Soden Co., Baltimore, Md.	STRIPS (Steel.) American Steel & Wire Co., Baltimore.
<b>SEPTIC TANKS.</b> Kaunitz Co., Inc., Perry, N. Y.	SEWER Joint Compounds. Pacific Flush-Tank Co., New York, N. Y. Servicised Premoulded Products, Inc., Chicago, Ill.	STEAM SHOVELS. Bucyrus-Erie Co., Erie, Pa. The Shovel Co., The, Lorain, Ohio. —Specialties. Jenkins Bros., New York, N. Y. Lunkenhimer Co., The, Cincinnati, O. Mueller Co., Decatur, Ill. —Traps. Jenkins Bros., New York, N. Y.	STRUCTURAL STEEL (Hot Galvanized.) Bessemer Galvanizing Works, Birmingham. —and Iron. American Bridge Co., New York, N. Y. Belmont Iron Works, Philadelphia, Pa. Carnegie Steel Co., Pittsburgh, Pa. Carolina Steel & Iron Co., Greensboro, N. C. Champion Bridge Co., Wilmington, Ohio. Converse Bridge & Steel Co., Chattanooga, Tenn. Dietrich Brothers, Baltimore, Md. Eichleay, Jr., Co., John, Pittsburgh. Erie Steel Constr. Co., Erie, Pa. Ingalls Iron Works Co., Birmingham, Ala. McClinic-Marshall Co., Pittsburgh, Pa. Nashville Bridge Co., Nashville, Tenn. Phoenix Iron Co., The, Phila., Pa. Pidgeon-Thomas Iron Co., Memphis, Tenn. Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa. Republic Iron & Steel Co., Youngstown, O. Richmond Struc. Steel Co., Richmond, Va. Roanoke Iron & Bridge Works, Inc., Roanoke, Va. Ryerson & Son, Inc., Jos. T., St. Louis and New York. Snead Architectural Iron Works, Louisville, Ky. Southern Engineering Co., Charlotte, N. C. Tennessee Coal, Iron & Railroad Co., Birmingham, Ala. Virginia Bridge & Iron Co., Roanoke, Va.
<b>SHADES (Offset.)</b> Hough Shade Corp., Chicago, Ill.	SLABS (Concrete Floor.) American Cement Tile Mfg. Co., Pittsburgh, Pa. —(Concrete Roof.) American Cement Tile Mfg. Co., Pittsburgh, Pa.	STEEL. Bethlehem Steel Co., Bethlehem, Pa. Central Iron & Steel Co., Harrisburg, Pa. Crucible Steel Co., of Amer., New York City. Dietrich Brothers, Baltimore, Md. Gulf States Steel Co., Birmingham, Ala. Republic Iron & Steel Co., Youngstown, O. Ryerson & Son, Inc., Jos. T., St. Louis and New York. Tennessee Coal, Iron & Railroad Co., Birmingham, Ala. Virginia Bridge & Iron Co., Roanoke, Va. —(Alloy.) Crucible Steel Co. of Amer., New York City. Timken Roller Bearing Co., Canton, Ohio. —(Cold Drawn.) Bliss & Laughlin, Inc., Harvey, Ill. —(Cold Rolled.) American Steel & Wire Co., Balte., Md. Bliss & Laughlin, Inc., Harvey, Ill. —(Information Only.) American Institute of Steel Construction, Inc., New York City. —(Liners for Sewers, Tunnels and Caissons.) Commercial Shearing & Stamping Co., Youngstown, O.	SULPHATE OF ALUMINA. Grasselli Chemical Co., Inc., Birmingham, Ala.
<b>SHAFTING.</b> Foote Bros., Gear & Mach. Co., Chicago. Ryerson & Sons, Inc., Jos. T., St. Louis and New York.	SLICES GATES AND APPLIANCES. Smith Co., S. Morgan, York, Pa.	—(Special Analysis.) Timken Roller Bearing Co., Canton, Ohio. —(Tool, High Speed.) Bethlehem Steel Co., Bethlehem, Pa. Crucible Steel Co. of Amer., New York City. —Buildings (Designers and Builders.) American Bridge Co., New York, N. Y. Belmont Iron Works, Philadelphia, Pa. Braden Steel Corp., Tulsa, Okla.	SULPHURIC ACID. Dayson Chemical Co., The, Balto., Md. Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.
<b>SHEET Metal Work.</b> National Blow Pipes & Mfg. Co., Ltd., New Orleans, La. Skinner Bros., Mfg. Co., St. Louis, Mo.	SNATCH BLOCKS (For Wire and Manila Rope.) Patterson Co., W. W., Pittsburgh.	SWINGER ENGINES. Dake Engine Co., Grand Haven, Mich.	
<b>Metal Working Machinery.</b> Bliss Co., E. W., Brooklyn, N. Y. Whitney Metal Tool Co., Rockford, Ill. Yoder Co., The, Cleveland, Ohio.	SPADES. American Mfg. Co., Chattanooga, Tenn.	SWITCHBOARDS, SWITCHES, ETC. Adam Elec. Co., Frank, St. Louis. Westinghouse Elec. & Mfg. Co., E. Pittsburg, Pa.	
<b>Steel and Iron.</b> American Rolling Mill Co., Middletown, O. American Sheet and Tin Plate Co., Pittsburgh, Pa. Bethlehem Steel Co., Bethlehem, Pa. Granite City Steel Co., Granite City, Ill. Republic Iron & Steel Co., Youngstown, O. Ryerson & Son, Inc., Jos. T., St. Louis and New York. Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.	SPEED REDUCERS. Earle Gear & Mach. Co., Phila., Pa. Foote Bros. Gear & Mch. Co., Chicago.		

**SYSTEMS (Business.)**  
Ernst & Ernst, New York, N. Y.

**TACKLE BLOCKS (For Wire and Manila Rope.)**  
Patterson Co., W. W., Pittsburgh.

**TANKS (Air Compressor.)**  
Air-Tight Steel Tank Co., Pittsburgh, Pa.  
Scaife & Sons, Wm. B., Oakmont, Pa.  
Titusville Iron Works Co., Titusville, Pa.

**(Elevated Steel.)**  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Chicago Bridge & Iron Works, Atlanta, Ga.  
Coke Mfg. Co., R. D., Newnan, Ga.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Schofield's Sons Co., J. S., Macon, Ga.  
Virginia Bridge & Iron Co., Roanoke, Va.

**(Elevated Wood.)**  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Davis & Son, G. M., Palatka, Fla.  
Woolford Wood Tank Mfg. Co., G.  
Paschall P. O., Philadelphia.

**(Iron and Steel.)**  
Air-Tight Steel Tank Co., Pittsburgh, Pa.  
American Bridge Co., New York, N. Y.  
Biggs Boiler Works Co., Akron, Ohio.  
Birmingham Tank Co., Birmingham.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Works, Atlanta, Ga.  
Cole Mfg. Co., R. D., Newnan, Ga.  
Downingtown Iron Works, Downingtown, Pa.  
Hammond Iron Works, Warren, Pa.  
Lombard Iron Works & Supply Co., Augusta, Ga.  
McClintic-Marshall Co., Pittsburgh, Pa.  
Mecklenburg Iron Works, Charlotte, N. C.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Seale & Sons, Wm. B., Oakmont, Pa.  
Schofield's Sons Co., J. S., Macon, Ga.  
Titusville Iron Works Co., Titusville, Pa.  
Virginia Bridge & Iron Co., Roanoke, Va.  
Westinghouse Traction Brake Co., Willingdon, Pa.

**(Seamless Steel.)**  
Janney, Jr., Jas. A., Phila., Pa.  
National Tube Co., Pittsburgh, Pa.

**(Storage, Oil, etc.)**  
Biggs Boiler Works, Akron, Ohio.  
Birmingham Boiler & Engr. Co., Birmingham, Ala.  
Chicago Bridge & Iron Works, Atlanta, Ga.  
Downingtown Iron Works, Downingtown, Pa.

**Hammond Iron Works, Warren, Pa.  
Ingraham Iron Works Co., Birmingham, Ala.  
Mecklenburg Iron Works, Charlotte, N. C.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Titusville Iron Works Co., Titusville, Pa.**

**(Wood.)**  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Davis & Son, G. M., Palatka, Fla.  
Virginia Mch. & Well Co., Richmond, Va.  
Woolford Wood Tank Mfg. Co., G.  
Paschall P. O., Philadelphia.

**(Wood Pickling.)**  
Woolford Wood Tank Mfg. Co., G.  
Paschall P. O., Philadelphia.

**TAPE (Insulating.)**  
Okonite Co., New York, N. Y.  
**(Measuring.)**  
Lufkin Rule Co., Saginaw, Mich.

**TAX SPECIALISTS.**  
Ernst & Ernst, New York, N. Y.  
Le Baron, Ernest T., Jacksonville, Fla.

**TELEPHONE SERVICE.**  
American Telephone & Telegraph Co.

**TERRA COTTA (Ornamental.)**  
Atlanta Terra Cotta Co., Atlanta, Ga.

**TEXTILE CHEMICALS.**  
Grasselli Chemical Co., Inc., Birmingham, Ala.

**TILE (Cement Roofing.)**  
American Cement Tile Mfg. Co., Pittsburgh, Pa.

**(Cork Composition.)**  
Congoleum-Nairn, Inc., Kearny, N. J.

**(Cork Flooring.)**  
Congoleum-Nairn, Inc., Kearny, N. J.

**(Hollow Building.)**  
Cambria Clay Products Co., Blackford, Ohio.

**(Roof.)**  
Hood Co., B. Mifflin, Daisy, Tenn.

**(Rubber.)**  
Congoleum-Nairn, Inc., Kearny, N. J.

**(Sewer.)**  
Lee Clay Products Co., Clearfield, Ky.

**TIMBER Fittings.**  
Duplex Hanger Co., Cleveland, Ohio.

**(Creosoted.)**  
Amer. Creosote Wks., Inc., New Orleans.

Amer. Creosoting Co., Inc., Louisville, Ky.

Prettyman & Sons, J. F., Charleston, S. C.

**TIME Recorders.**  
Kaiser Klock Co., L. E., Baltimore, Md.

**TIN AND TERNE PLATES.**  
American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Bethlehem Steel Co., Bethlehem, Pa.  
Granite City Steel Co., Granite City, Ill.  
Youngstown Sheet & Tube Co., Youngstown, Ohio.

**TOBACCO MACHINERY.**  
Ripley Foundry & Machine Co., Ripley, O.

**TOILET TISSUE.**  
Victoria Paper Mills Co., Fulton, N. Y.

**TOOLS (Measuring.)**  
Lufkin Rule Co., Saginaw, Mich.

**(Woodworking—Portable.)**  
Electric, Hand.)  
Wappat, Incorporated, Pittsburgh, Pa.

**TORCHES (Blow.)**  
Wall Mfg. Supply Co., P., Pittsburgh, Pa.

**(Kerosene.)**  
St. Paul Welding & Mfg. Co., St. Paul, Minn.

**TOWERS (Electric Transmission.)**  
American Bridge Co., New York, N. Y.  
Bessemer Galvanizing Works, Birmingham.  
Nashville Bridge Co., Nashville, Tenn.

**(Radio.)**  
Bessemer Galv. Wks., Birmingham, Ala.

**(Steel and Wood.)**  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Cole Mfg. Co., R. D., Newnan, Ga.

**TRACK (Portable or Permanent.)**  
Sweet's Steel Co., Williamsport, Pa.

**TRACTORS (Industrial.)**

Atlas Car & Mfg. Co., The, Cleveland, O.

Caterpillar Tractor Co., San Leandro, Cal.

Clark Tractor Co., Battle Creek, Mich.

Cleveland Tractor Co., Cleveland, Ohio.

International Harvester Co., of America, Inc., Chicago, Ill.

**(Road.)**

Caterpillar Tractor Co., San Leandro, Cal.

Cleveland Tractor Co., Cleveland, Ohio.

**Attachments (Side Boom.)**

W-K-M Co., Inc., Houston, Texas.

**TRAILERS (Four Wheel.)**

Electric Wheel Co., Quincy, Ill.

**(Heavy Duty.)**

Electric Wheel Co., Quincy, Ill.

**(Industrial.)**

Easton Car & Construction Co., Easton, Pa.

Electric Wheel Co., Quincy, Ill.

**(Pole.)**

Electric Wheel Co., Quincy, Ill.

**TRAMWAYS (Aerial Wire Rope.)**

American Steel & Wire Co., Balto., Md.

Broderick & Bascom Rope Co., St. Louis.

Leschen & Sons Rope Co., A., St. Louis.

**TRANSFORMERS.**

Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

**(Used.)**

Electric Service Co., Cincinnati, Ohio.

**TRANSMISSION TOWERS (Galvanized.)**

Bessemer Galvanizing Works, Birmingham.

McClintic-Marshall Co., Pittsburgh, Pa.

**TRENCH MACHINERY. See Excavators (Trench.)**

**TRESTLES (Wooden.)**

Patent Scaffolding Co., Chicago, Ill.

**TRI-SODIUM PHOSPHATE.**

Grasselli Chemical Co., Inc., Birmingham, Ala.

**TROLLEY WHEELS (Self Oiling.)**

Moocassin Bushing Co., Chattanooga, Tenn.

**TRUCK CRANES.**

Universal Crane Co., Lorain, O.

**TRUCKS (Dry Kiln.)**

Moore Dry Kiln Co., Jacksonville, Fla.

**(Industrial.)**

Atlas Car & Mfg. Co., The, Cleveland, O.

Clark Tractor Co., Battle Creek, Mich.

Lansing Co., Lansing, Mich.

Nutting Truck Co., Chicago, Ill.

Service Caster & Truck Co., Albion, Mich.

**WATERPROOFING (For Brick, Concrete, Granite.)**

Asphalt Products Co., Syracuse, N. Y.

Foster Co., Benjamin, Philadelphia, Pa.

Servicized Premoulded Products, Inc., Chicago, Ill.

Solvay Sales Corp., New York City.

Senneborn, Sons, Inc., L., New York.

**WATER Purification.**

Roberts Filter Mfg. Co., Darby (Phila.), Pa.

Scaife & Sons, Wm. B., Oakmont, Pa.

**—Softening Apparatus (Purifying.)**

American Water Softener Co., Phila., Pa.

International Filter Co., Chicago, Ill.

**WELDING APPARATUS (Electric Arc.)**

Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

**Apparatus (Oxy-Acetylene.)**

St. Paul Welding & Mfg. Co., St. Paul, Minn.

**WELL CONTRACTORS (Oil, Artesian, etc.)**

Virginia Machy. & Well Co., Richmond, Va.

**WHEELBARROWS.**

Lansing Co., Lansing, Mich.

Sterling Wheelbarrow Co., Milwaukee.

**WHEELS AND AXLES.**

Carnegie Steel Co., Pittsburgh, Pa.

**WINCHES.**

Sagam Derrick Co., Chicago, Ill.

**WINDOW Frames and Sash (Metal.)**

Bayley Co., The William, Springfield, O.

Lupton's Sons Co., David, Phila., Pa.

Truscon Steel Co., Youngstown, O.

**WINDOWS. (Steel Basement, Casement.)**

Bayley Co., The William, Springfield, O.

Detroit Steel Products Co., Detroit, Mich.

Lupton's Sons Co., David, Phila., Pa.

**(Steel Garage.)**

Detroit Steel Products Co., Detroit, Mich.

Lupton's Sons Co., David, Phila., Pa.

**(Steel Pivoted, Screened.)**

Bayley Co., William, Springfield, O.

**(Ventilating.)**

Bayley Co., The William, Springfield, O.

Detroit Steel Products Co., Detroit, Mich.

Lupton's Sons Co., David, Phila., Pa.

**WIRE (All Kinds.)**

American Steel & Wire Co., Chicago.

Roebling's Sons Co., John A., Trenton, N. J.

Ryerson & Son, Inc., Jas. T., St. Louis and New York.

**(Barbed Wire, etc.)**

American Steel & Wire Co., Balto., Md.

Gulf States Steel Co., Birmingham, Ala.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

**(Fence.)**

Anchor Post Fence Co., Baltimore, Md.

Gulf States Steel Co., Birmingham, Ala.

Page Fence Association, Chicago, Ill.

**(Flat and Round.)**

American Steel & Wire Co., Balto., Md.

**(Galvanized and Annealed.)**

American Steel & Wire Co., Balto., Md.

**(Telephone and Telegraph.)**

American Steel & Wire Co., Balto., Md.

**(Welding.)**

American Steel & Wire Co., Chicago, Ill.

Roebling's Sons Co., John A., Trenton, N. J.

**Cloth (Iron, Steel, Copper, Brass, etc.)**

Harrington & King Perf. Co., Chicago.

Ludlow Saylor Wire Co., The, St. Louis, Mo.

**Goods.**

Dufur, Baggott & Co., Baltimore, Md.

**Netting.**

Ludlow Saylor Wire Co., The, St. Louis, Mo.

**Rope (Transmission, Holisting, Haulage.)**

American Steel & Wire Co., Chicago, Ill.

Broderick & Bascom Rope Co., St. Louis.

Leschen & Sons Rope Co., A., St. Louis.

Roebling's Sons Co., John A., Trenton, N. J.

**Rope Clips.**

American Steel & Wire Co., Balto., Md.

Broderick & Bascom Rope Co., St. Louis.

**WOODWORKING MACHINERY.**

Wappat, Incorporated, Pittsburgh, Pa.

**ZINC CHLORIDE.**

Grasselli Chemical Co., Inc., Birmingham, Ala.

**ZINC META ARSENITE (Wood Preservative.)**

Curtin-Howe Corp., New York City.

Gulf States Cross. Co., Hattiesburg, Miss.

**M**ANUFACTURING industries of Alabama, comprising 2,355 establishments, in 1927 used materials costing \$317,493,407.00, consumed over 697,996 primary horsepower and turned out products worth \$550,372,126.00, of which \$232,878,719.00 was the value added by manufacturing process.

This is an extract from a comprehensive survey of Alabama, made by the Alabama Industrial Development Board. Copies of this survey will be furnished responsible individuals upon request. Address: Alabama Industrial Development Board, Brown-Marx Building, Birmingham, Ala.

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*Industry is growing, payrolls are increasing, markets are expanding in Alabama. Remarkable opportunities for farsighted manufacturers exist in nearly 400 Alabama towns served by the Alabama Power Company, through whose courtesy this advertisement is published. For further details on these towns, write New Industries Division, Alabama Power Company, Birmingham, Ala.*

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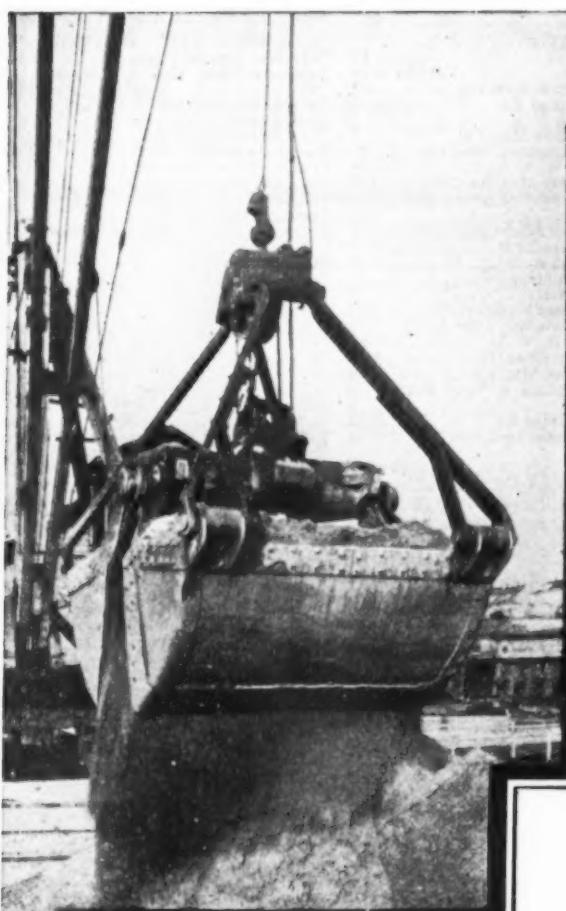
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### 17 POINTS OF LEADERSHIP

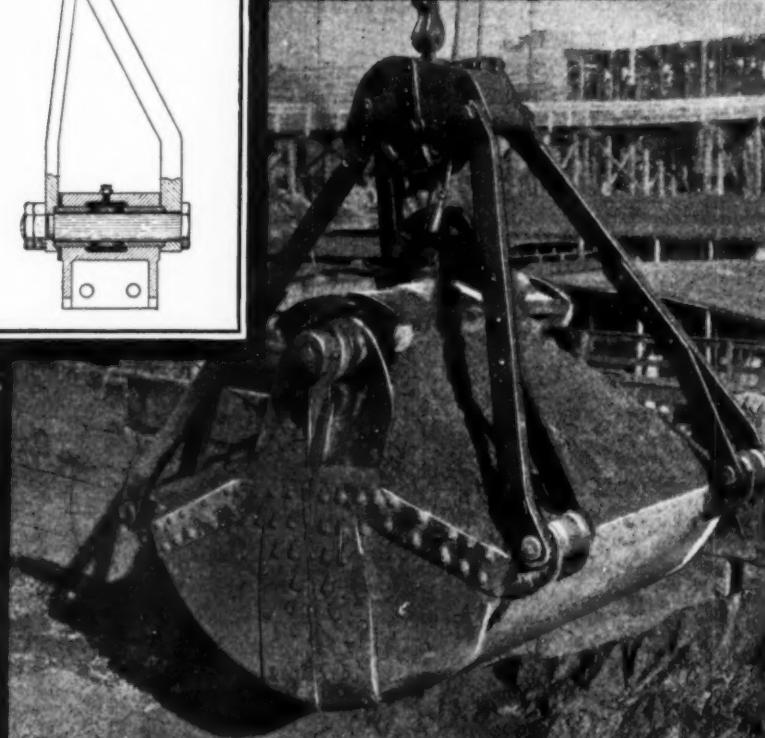
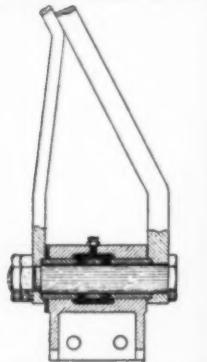
1. One-piece steel crosshead.
2. No wear in upper or lower arm ends.
3. Heavy high carbon steel arms.
4. Adjustable undiminished closing power.
5. Long life to sheaves and cable.
6. Long arm bolt bearings sealed from grit.
7. Lever type steel arm brackets.
8. Closing cable is protected against excessive wear.
9. Heavy shock-resisting renewable lips.
10. Cable clips eliminated.
11. Sealed center shaft bearings.
12. Greater digging power with no dead weight.
13. Penetration and clean dumping.
14. Dropping shocks absorbed, eliminating breakage.
15. Rigid shell construction.
16. Heavy duty, high carbon drop-forged steel teeth.
17. Lips or teeth points hit first.

### WHY AN OWEN COSTS LESS TO OPERATE

CAREFUL design and construction that omits no detail, insures continuous economical operation and lasting uninterrupted service for Owen Buckets. All wear is eliminated from castings, bars and plates. Heat-treated pins and shafts turn in bushings made of thoroughly tested metals. Alemite lubrication is used throughout, with grease reservoirs at necessary locations. Lips and teeth are of strong, high carbon and wear-resistant alloy steels. Cable is protected from chafing by 4 hardened steel rollers. Rapid reaving is obtained with holding and closing line sockets—without the use of cable clips. And, all parts of an Owen bucket are *guaranteed against breakage*. Write for "17 Points of Leadership."

**THE OWEN BUCKET CO.**

6015 Breakwater Ave., Cleveland, O.



# Owen Buckets



## Wipe Out Maintenance!



### Expansion Joint

For Pavements, Sidewalks, Roads, Buildings, Reservoirs, Sewer Systems

### Bridge Planking Fibrated Asphalt

### Industrial Flooring

### Waterproofing Protection Course

### Sewer Pipe Belt Calking

### Rubber Paving Block

### Rail Filler and Track Insulation

### Highway Crossing Material

### Waterproofing Asphalts

### Fibrated Bituminous Construction Materials

Servicised Fibrated Asphalt Expansion Joints and other premoulded products are designed to protect concrete or rigid construction work of all types against the consequences of its own rigidity when confronted with nature's irresistible forces of expansion and contraction.

Public and private structures whether buildings, roads, streets, walls, viaducts, concrete bridges, etc., are protected against the destructive results of those stresses by the installation of these premoulded safety strips.

Servicised products are pressure produced from specially refined asphalts to which fibrous matter is added for elasticity and reinforcement—then formed hot under pressure into the required shapes,—ready for use and easily handled.

They are invaluable to all forms of concrete construction and especially their use makes for better, smoother and more durable highways, their cost is little, but there they save their weight in gold.

The Servicised Products Corporation of Louisiana at Marerro is now ready to serve the South promptly.

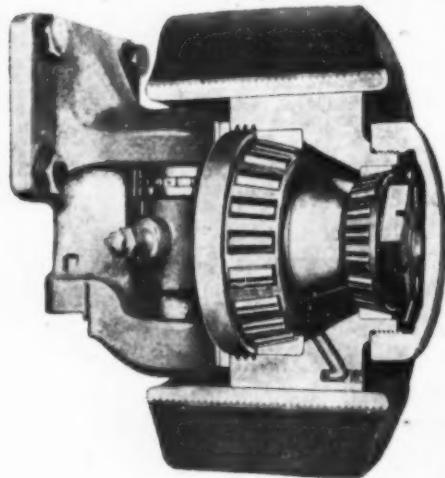
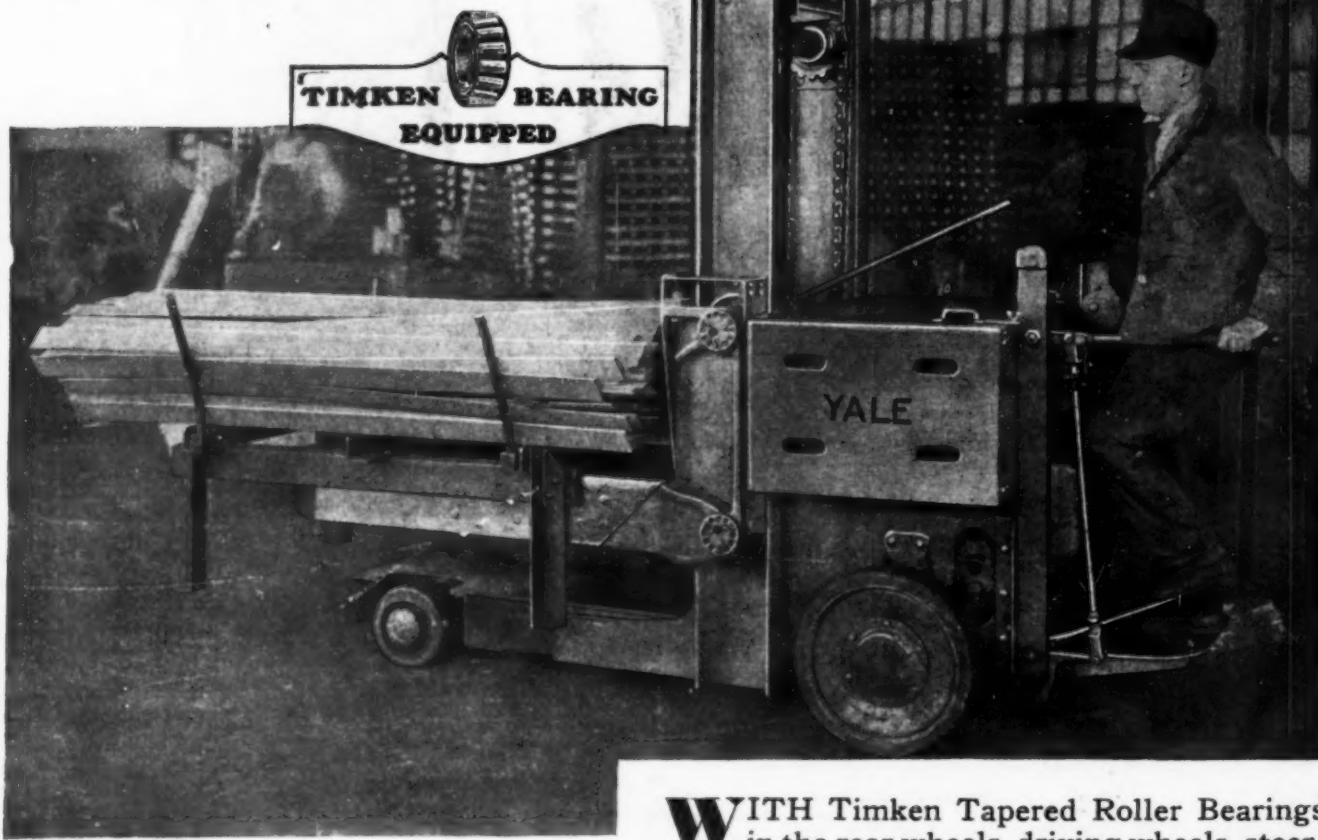
## **SERVICISED PREMOULDED PRODUCTS, INC.**

53 West Jackson Blvd., Chicago, Ill.

GENERAL DISTRIBUTORS for Products Manufactured by  
SERVICISED PRODUCTS CORPORATION

DISTRIBUTORS and DEALERS IN PRINCIPAL TRADING CITIES      Factory, 6051 W. 65th St., CHICAGO, ILLINOIS

## All-Load Protection For Yale Electric Lift Trucks



**W**ITH Timken Tapered Roller Bearings in the rear wheels, driving wheels, steering pivots and drive unit, Yale & Towne industrial trucks are safeguarded against weight, wear and shock—for Timken is *the one bearing that does all things well*.

Because of the exclusive combination of Timken tapered construction, Timken *POSITIVELY ALIGNED ROLLS* and Timken-made steel, the Timken Bearings are not only able to carry safely the heaviest *vertical, thrust and combined loads* ever likely to be imposed upon them in regular truck service, but in addition possess a big volume of reserve endurance ready for any emergency.

And with friction reduced to the vanishing point, starting effort is greatly lessened; power is conserved; lubricant is saved; storage batteries are protected; floors and runways are preserved; truck life is prolonged; maintenance costs are cut to the bone.

THE TIMKEN ROLLER BEARING CO.  
C A N T O N, O H I O

**TIMKEN** Tapered  
Roller **BEARINGS**

